

HORN

CONSTRUCTION

DATA

and

HAND BOOK



A. C. HORN COMPANY

ESTABLISHED 1897

**Manufacturers of Materials for
Building Construction and Maintenance**

LONG ISLAND CITY • NEW YORK

Houston, Texas

San Francisco, Calif.

Canadian Factory and Sales Office

A. C. HORN COMPANY LIMITED

821 QUEEN ST. EAST - TORONTO, ONTARIO

249 Prior St., Vancouver;

280 LaGauchetiere St. E., Montreal

THE A. C. HORN COMPANY, INC.

- Background . . .** Founded in 1897. Pioneers in the formulation and manufacture of materials, and in the development of methods for the protection and decoration of structures and to make them water-resistant. Producers of an extensive line of time-tested products which have made "Horn" a standard in architectural and engineering specifications.
- Responsibility . .** AAA1—the highest financial rating given by mercantile credit agencies.
- Plants** Factories, laboratories and offices occupy more than two square blocks in the heart of one of America's greatest industrial centers; other plants in Houston, Toronto, Canada, and San Francisco.
- Warehouses . . .** Strategically located at Chicago, Kansas City, Los Angeles.
- Laboratories . . .** A. C. Horn Company, Inc. maintains completely staffed laboratories—Research, Factory Control and Raw Material Control—with skilled chemists in all, supervised by specialists in their respective fields.
- Branch Offices .** Complete sales and engineering service is available in Atlanta, Baltimore, Birmingham, Boston, Buffalo, Chicago, Cleveland, Dallas, Detroit, Fort Worth, Houston, Kansas City, Los Angeles, Milwaukee, Minneapolis, New Orleans, Newark, Oakland, Philadelphia, Portland (Maine), Portland (Oregon), Rochester, St. Louis, San Antonio, San Francisco, Seattle, Syracuse, Washington.

HORN SERVICE

A. C. Horn Company, Inc. maintains a trained staff of engineers ready to supply you with engineering data and specifications to help you solve building maintenance problems, including waterproofing.

In addition, a contracting department for remedial restoration is at your service—a department with broad and varied experience on thousands of projects, involving every industry, every variation in climate and every condition.

Fifty years of continued leadership is your assurance of dependability and reliability when you use a Horn Product or a Horn Service. You are invited to avail yourself, of the opportunity to benefit from this experience.

Detailed literature and color cards will be gladly sent upon request.

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PLEASE NOTE — Covering capacities given herein apply to the U.S. or wine gallon — for the Imperial gallon, increase covering capacities by one-fifth.

In Canada, Horn steel drums contain 45 Imperial Gallons. Half-drums are not used.

Imperial Gallon is 277.42 cu. inches or 160 Canadian Fluid Ounces. Canadian Fluid Ounce is 28.413 CCM.

U.S.A. Gallon is 231 cu. inches or 133.228 Canadian Fluid Ounces.

U.S.A. Fluid Ounce is 29.574 CCM.

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VULCATEX

Elastic Caulking Compound

Description:

Vulcatex is the time-tested leader of caulking compounds. It is the most economical caulking compound on the market, since it does not dry out and does not crack or shrink as other caulking compounds do. After twenty years of service many Vulcatex applications are still pliable, watertight and effectively bonded to the joints. Vulcatex is made in *knife* and *gun* grade consistency.

Use:

Vulcatex is used wherever it is desired to make a sound water-resistant joint between masonry and window frames, stone copings, glass brick, steel sash, masonry construction and wood frame construction. Unless otherwise specified Vulcatex is furnished in natural light grey. When it is desired to match the color of the surrounding masonry or painted surface, the applied Vulcatex strip may be painted with an exterior paint.

All joints should be primed with Vulcatex Joint Primer, before caulking with Vulcatex.

Coverage:

One gallon (231 cubic inches) will caulk approximately:

9 windows 4x7 ft. with $\frac{3}{8}$ inch rabbet

6 windows 4x7 ft. with $\frac{1}{2}$ inch rabbet

4 windows 4x7 ft. with $\frac{3}{4}$ inch rabbet

or 77 lineal feet of open $\frac{1}{2}$ x $\frac{1}{2}$ inch.

ALWAYS SPECIFY WHETHER GUN GRADE OR KNIFE
GRADE IS DESIRED

Colors:

Standard color is natural (light grey). Vulcatex is also made in white, limestone, black, red, green, brown, dark-grey.

Packaging:

Drums (55-60 gals.)

Half Drums (30-40 gals.)

5-gal. pails

1-gal. cans (packed 4 to a case)

Vulcatex is also packed in factory-sealed cellophane cartridges. See "Vulcatex Thrift-paks."

VULCATEX JOINT PRIMER

A quick-drying, clear amber liquid, to be used in conjunction with Vulcatex to prevent porous surfaces from shortening the life of the caulking compound by absorbing the necessary oils; and to assure a clean, dust-free surface to which the caulking compound can adhere.

VULCATEX THRIFTPAKS



Description:

An elastic caulking compound, packed in factory-sealed cellophane "cartridges" designed to fit into the standard caulking gun. The use of Vulcatex packed in this manner is preferred by architects, engineers and contractors everywhere because of its decided economy.

When you use Vulcatex Thriftpaks there is

NO WASTE

NO JOB ADULTERATION POSSIBLE

NO TIME WASTED LOADING GUNS

NO LADDER-CLIMBING TO LOAD AND RE-LOAD

Use:

Same as Vulcatex.

Coverage:

Ten Thriftpaks (approximately one gallon or 231 cubic inches) will caulk approximately:

9 windows 4x7 ft. with $\frac{3}{8}$ inch rabbet

6 windows 4x7 ft. with $\frac{1}{2}$ inch rabbet

4 windows 4x7 ft. with $\frac{3}{4}$ inch rabbet
or 77 lineal feet of open $\frac{1}{2}$ x $\frac{1}{2}$ inch.

Colors:

Standard color is natural (light grey). Vulcatex Thriftpaks are also made in white, limestone, black, red, green, brown, dark-grey.

Packaging:

In standard units containing 100 thriftpaks.

Minimum shipment is 100 thriftpaks (approximately 10 gallons of material).

HORN GLAZING COMPOUND

Description:

A ready-to-use plastic. Adheres firmly to wood, steel and glass; forms leakproof and dustproof joints; and maintains a tight seal. Cushions shock and vibration, thereby minimizing breakage of glass resulting from expansion and contraction of wood and steel windows. It is decidedly better than putty, for it does not dry out as putty does—it stays "put," effectively resisting weather, shock and vibration. It is more economical too.

Use:

Easily applied with an ordinary putty knife or glazing tool. If for any reason the glazing compound must be removed, it can be quickly rolled off with the same tool that was used for its application.

Coverage:

Estimate 150 lineal feet per gallon on *ordinary wood sash*, and 100 lineal feet per gallon on *factory steel sash*.

Color:

Light Grey.

Packaging:

Drums (55-60 gals.)

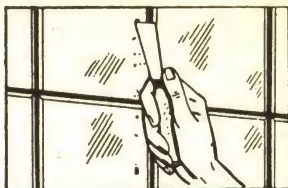
Half Drums (30-40 gals.)

5-gal. pails

1-gal. cans (packed 4 to a case)



1—Ready to use. No kneading or softening. No time wasted for preparation.



2—Quickly and easily applied with ordinary glazing tool or wide blade spatula.



3—No priming or painting of window sash. Only clean surfaces required.



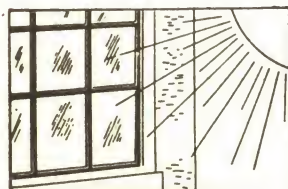
4—Easily removed. No laborious chiseling required. Simply roll off with glazing tool.



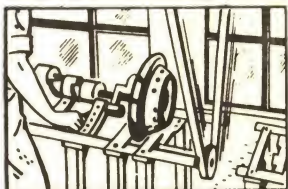
5—Adheres firmly to wood, steel, glass. Will not pull away or permit leakage.



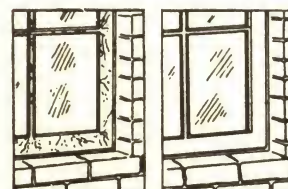
6—Does not set hard. Does not crack or crumble. Extra long life and service.



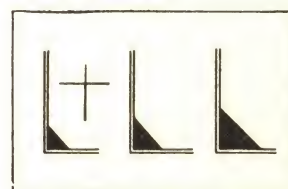
7—Self-adjusting to the contraction and expansion of wood, steel and glass.



8—Cushions glass, absorbing shock and vibration. Will not jar loose. Reduces glass breakage.



9—Resists corrosion of steel sash. Helps prevent the rotting of wood sash.



10—Covering capacity per Gal.
 $\frac{3}{8}$ " Rabbet—approx. 195 Lineal ft.
 $\frac{1}{2}$ " Rabbet—approx. 140 Lineal ft.
 $\frac{3}{4}$ " Rabbet—approx. 85 Lineal ft.

HORNSCAULK

Description:

A plastic caulking compound made of refined asphalt and blended oils. Made in Gun Grade consistency only.

Use:

Wherever it is desired to make a sound water-tight joint, between masonry and window or door frames, on stone copings, capstones, etc. Cannot be painted over, as asphalt will bleed through paint film and discolor. Used in both masonry and frame construction.

Covering Capacity:

One gallon (231 cubic inches) will caulk approximately:

9 windows 4x7 ft. with $\frac{3}{8}$ inch rabbet

6 windows 4x7 ft. with $\frac{1}{2}$ inch rabbet

4 windows 4x7 ft. with $\frac{3}{4}$ inch rabbet

or 77 lineal feet of open $\frac{1}{2}$ x $\frac{1}{2}$ inch.

Color:

Black.

Packaging:

Drums (55-60 gals.)

Half Drums (30-40 gals.)

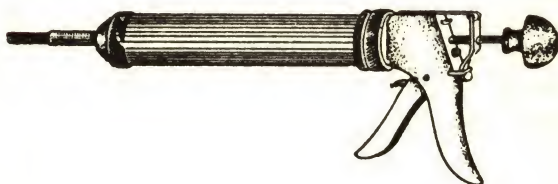
5-gal. pails

1-gal. cans (packed 4 to a case)

HORN COUNTERBALANCED CAULKING GUN

A practical accessory for the application of glazing, pointing and caulking compounds of gun grade consistency. The HORN exclusive feature of counter-balance reduces operating fatigue to a minimum.

Shipped complete with No. 50 Nozzle Tip.



NOZZLE TIPS

Nozzle tips for use with the HORN COUNTERBALANCED CAULKING GUN are available in the following dimensions. Prices on request.



No. 20
 $\frac{1}{8}$ "



No. 30
 $\frac{1}{4}$ "



No. 80
 $\frac{3}{8}$ "



No. 50
 $\frac{1}{2}$ "



No. 70
 $\frac{3}{4}$ "



No. 100
(Nozz'e Head
and Tip)
 $2\frac{1}{2}$ " x $\frac{1}{8}$ "

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DRI-N-TITE

The Modern Method of Roof Resurfacing

A good roof coating penetrates the felt, protects the surface, does not run when exposed to hot sun, does not alligator, check, crack or peel; withstands the weather elements and is tough and flexible.

HORN DRI-N-TITE does just that. Reason? It is made of special processed materials, scientifically treated and tempered asphalts, non-oxidizing agents, special oils, and other high-grade ingredients.

HORN DRI-N-TITE contains penetrative oils which re-saturate the dried-out base of the roof, leaving a tough, heavy, elastic film of asphalt and asbestos on the surface of the roof.

DRI-N-TITE LIQUID

Description:

A combination of selected asphalts, oils and asbestos fibre for resurfacing roofs in service. Skillfully processed to insure maximum protection against the action of rust, decay and weather. A heavy-bodied consistency, which is applied with a standard roofing brush.

Use:

For re-saturating and re-coating composition, gravel, paper or felt, corrugated metal, concrete and metal or tin roofs. To be used as it comes from the container, without thinning.

Covering Capacity:

	per Square (100 sq. ft.)
Composition.....	Approx. 2 to 3 gals.
Gravel.....	Approx. 3 to 5 gals.
Paper or Felt.....	Approx. 2 to 3 gals.
Corrugated Metal	Approx. 1 to 2 1/2 gals.
Concrete.....	Approx. 2 to 4 gals.
Metal or Tin.....	Approx. 1 to 2 gals.

Colors:

Black, Red*, Green*.

*Use HORN DRI-N-TITE PRIMER Red or Green with HORN DRI-N-TITE Liquid Red and Green.

Packaging:

Drums (55-60 gals.)	5 gal. pails
Half Drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

DRI-N-TITE PLASTIC

Description:

A trowel consistency plastic combining selected asphalts, oils and asbestos fibre.

Use:

For patching and repairing composition felt or paper roofs. For repairing leaking flashings, the base of ventilators, skylights and other superstructures. For coating the inside surfaces of parapet walls. To be used as it comes from the container, without thinning.

Covering Capacity:

Estimate about 40 pounds per 100 sq. ft. 1/16-inch in thickness.

Colors:

Black, Red*, Green*

*Use HORN DRI-N-TITE PRIMER Red or Green with HORN DRI-N-TITE Plastic Red or Green.

Packaging:

Drums (550-600 lbs.)	50-lb. pails
Half Drums (300-400 lbs.)	25-lb. pails
100-lb. kegs	10-lb. cans (packed 4 to a case)

DRI-N-TITE PRIMER

Description:

A pigmented liquid of brushing consistency designed to penetrate composition and concrete roof surfaces.

Use:

To resaturate dried-out composition roofs and to fill the pores of concrete roofs prior to the application of DRI-N-TITE. The use of DRI-N-TITE Primer minimizes the absorption of the oils in DRI-N-TITE.

Covering Capacity:

	Per Square (100 sq. ft.)
Concrete Roofs.....	Approx. 1 to 1½ gallons
Composition Roofs	Approx. 1 to 2 gallons

Colors:

Black, Red, Green

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

TRIPLEFLEX FABRIC

Description:

A specially woven cotton fabric completely saturated with a refined bitumen. It has the tensile strength necessary for holding waterproofing in place under the utmost strains to which buildings are subjected.

TRIPLEFLEX FABRIC meets the standard specifications for waterproofing fabric as follows:

Width, unsaturated37 inches
Width, saturated36 inches
Thread count not less than 18 by 18 nor more than 26
by 26
Weight, saturated, per sq. yd.....12 ounces
Minimum tensile strength:

Lengthwise, per inch of width.....50 lbs.
Crosswise, per inch of width.....50 lbs.

Flexible 0 deg. Fahr. to 250 deg. Fahr.

Elongation 10%.

Use:

Particularly recommended for membrane use in bridges and structures subject to vibration. Used on backs of parapet walls, and particularly in spandrel beam waterproofing in steel skeleton construction. Also used when built-up roofs are patched or repaired with DRI-N-TITE or ELASTEX. TRIPLEFLEX FABRIC may be used with DEHYDRATINE 10 Mastic.

Covering Capacity:

12½ yards required per 100 sq. ft. (1 ply).

Shipping Weight:

Packed only in rolls containing 50 sq. yds. 45 lbs. per roll.
(Width of roll, 36 inches; length, 50 yards; weight, 45 lbs.)

HORNLUME

Description:

An asphalt-base aluminum paint which reflects the ultra-violet rays of the sun—a property not possessed by ordinary aluminum paints. When HORNLUME is applied to a composition roof the asphalt penetrates the surface; the aluminum pigment then floats to the top and, by retaining its leafing properties and brightness, assures a protective coating.

Use:

Particularly recommended for composition or built-up roofs. Also suitable for application to corrugated metal, tin, gravel and concrete roofs. May be applied by brush or spray. Note that in HORNLUME, the asphalt and the aluminum are integral parts of the material. They are not applied separately; they are applied directly from the can, at one time, in one operation. . . . HORNLUME is an insulator and a reflector. Tests made on many roofs of many types have generally shown a lowering in the temperature inside a structure when the roof has been coated with HORNLUME. Differences of 22 degrees have been noted.

Covering Capacity:

Approximately 500 sq. ft. per gallon.

Packaging:

5-gal. containers

1-gal. containers (packed 4 to a case)

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BONDSIT

For Bonding New Concrete with Old Concrete

Description:

A chemical compound in powder form. When mixed with water it produces a solution which etches and opens up the pores of old concrete, thus providing a "key" or "tooth" for the bonding process.

Use:

The surface of the old concrete is first roughened with pointed mason's hammer, swept clean, then washed with BONDSIT, using two pounds per gallon of water. When bubbling has ceased, flush thoroughly with clean water to remove all traces of BONDSIT; scrub in with a stiff brush a slush coat, consisting of four parts cement and one part METALON; then, while the slush coat is still wet, trowel on the new topping, plaster, stucco or concrete.

Covering Capacity:

Two pounds of BONDSIT mixed with one gallon of water will treat approximately 150 sq. ft. of roughened concrete surface.

Packaging:

In 5-lb. glass jars (packed 6 to a case)

HORNCURE

Description:

A transparent liquid formulated to produce a watertight, airtight seal on the concrete surface in one operation. Does not stain the concrete. Dries quickly, uniformly, evenly and without pinholes, with a film that is both flexible and tough.

Use:

Produces a membrane on the slab of concrete, retarding evaporation of the water necessary for proper hydration of the cement and curing. It is applied in one coat by brush or spray immediately after the concrete is placed.

Covering Capacity:

Approximately 270 to 350 sq. ft. per gallon.

Packaging:

Drums (55-60 gals.)
Half Drums (30-40 gals.)
5-gal. pails

COLORUNDUM

INDOORS

OUTDOORS

**Beauty and Durability of Tile at
Cement-Floor Prices**

Description:

A dry powder composed of powerful coloring mediums, fused aggregates, damp-proofing and hardening elements, and cementitious binders.

Use:

For interior and exterior concrete floors. COLORUNDUM forms a colored armorplate integrally with the cement finish, similar to that of ceramic tile, and is the equivalent of tile in beauty and durability. It withstands exposure to the elements and is resistant to traffic wear.

Floors finished with COLORUNDUM are no more costly than painted cement floors. COLORUNDUM is therefore an alternate for higher priced floors, such as terrazzo and tile. Furthermore, the long life of COLORUNDUM greatly reduces the constant necessity for painting such areas as basements, showrooms, schools, hospitals, etc.

The non-slip, dense surface of COLORUNDUM makes it an ideal flooring for school corridors, auditoriums, stores, showrooms, sidewalks and ramps. The beauty of COLORUNDUM makes it applicable for floors in every type of construction.

COLORUNDUM is used exactly as it comes from the factory container, and is applied as a trowelled dust coat as the floor is laid.

Covering Capacity:

30 pounds per 100 sq. ft. of floor area.

Colors:

Red, Green, Brown, French Grey, Black.

Packaging:

In 100-lb. containers.

COLORUNDUM GLAZE COAT

Description:

A liquid for protecting colored cement work against the hazards of construction stains, such as plaster, oil, efflorescence, etc. Deepens and makes uniform the initial color. Seals in moisture to insure proper curing.

Use:

Apply one coat as it comes from the container, brushing out very thinly with a stiff bristle brush. When dry protect with building paper. Wax and burnish interior work if desirable. Do not apply until 24 hours after the installation of COLORUNDUM.

Covering Capacity:

One gallon covers approximately 500 sq. ft.

Colors:

Produced to match the color of the COLORUNDUM used, namely, Red, Green, Brown, French Grey, Black.

Packaging:

5-gal. pails

1-gal. cans (packed 4 to a case)

Typical Specification:

The cement floors shall be colored and hardened by the use of COLORUNDUM, used in accordance with the directions of the manufacturer, the A. C. HORN COMPANY. Color and scoring to be as directed by the architect. Finished floors to receive COLORUNDUM GLAZE COAT and, when dry, to be protected with building paper.

FEREM

"Blue Temper" Concrete Hardener Topping

Description:

A product which makes possible the construction of tough, durable, non-slip floors. Has all the desirable characteristics of hardeners, admixtures and processed components. Contains no sand, stone or silica, and requires only the addition of cement and water. FEREM "Blue Temper" floors are unusually resistant to wear, water and chemical disintegration. The principal component of FEREM has a rating of 9 in hardness on the Mohs scale, which is only one point less than the rating of the diamond. FEREM "Blue Temper" floors are extremely ductile.

Use:

FEREM is used exclusively as the "Blue Temper" component in place of sand and gravel or stone in floor toppings in dairy and creamery floors and in industrial plants where the floors are subject to heavy traffic. FEREM creates the ideal type of processed cement floor for resistance to water and oil spillage. FEREM is used in all heavy duty floors—in newly constructed buildings, or when patching, resurfacing or relaying worn and eroded floors.

Covering Capacity:

Three hundred pounds of FEREM are mixed with one bag of either Portland or hi-early cement to cover approximately 50 sq. ft. one-half inch thick. By volume this is equivalent to 1½ parts FEREM to one part cement. By weight it is equivalent to 3 parts FEREM to one part cement. After these materials are thoroughly *dry-mixed* to a uniform color, sufficient water only is added to make a *stiff* topping.

Color:

Blue-black.

Packaging:

100-lb. containers.

FERRO-FAX

Metallic Floor Hardener

Description:

A finely divided and graduated metallic aggregate free from oil and all foreign matter. When incorporated into a cement floor topping or monolithic floor at the time of installation, FERRO-FAX produces a smooth, dense, steel-like surface which is highly resistant to wear and dusting.

FERRO-FAX meets Federal specifications, is approved by leading architects and engineers, and has been used upon millions of square feet of cement floors.

Use:

Mixed with dry Portland Cement (2 bags FERRO-FAX to 1 bag cement) and dusted over a floor topping at time of floating and troweling. FERRO-FAX has become the approved method of producing commercial floors of all types. Extensively used over troweled-off rough concrete from which the usual sand and cement topping has been omitted. Finished floors should not be wet down for curing until 48 hours after installation.

Covering Capacity:

Standard Cement Floors: 30 lbs. per 100 sq. ft.

For floors subjected to heavy traffic: 40 lbs. per 100 sq. ft.

For extremely heavy duty floors, loading platforms, railroad repair shops, forge shops, piers, etc.: 60 to 125 lbs. per 100 sq. ft.

Colors:

Natural-Grey, Red, Brown

Packaging:

100-lb. containers.

FLORCREX

Sealer for All Types of Wood Floors

Description:

A scientific combination of gums, resins and treated oils, designed to penetrate all types of wood floors. A pale amber-colored liquid for preserving wood floors. Approved by the Maple Flooring Manufacturers Association.

Use:

To restore and enhance the natural grain of wood and provide a non-slip finish that resists staining or water spotting. Recommended for use on new and old wood floors and on old linoleum. Applied with mop applicator or rag over sanded or virgin wood floors; surface excess is removed with dry rags. Seals by depositing synthetic compounds directly below the wearing surface. Dries overnight.

Covering Capacity:

On open-grain wood: 350 to 450 sq. ft. per gallon.

On close-grained wood: 450 to 600 sq. ft. per gallon.

Colors: Natural (pale amber), Oak.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half Drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

HORNLUX

Description:

A penetrant sealer for new terrazzo floors, new or old magnesite-composition and concrete floors. HORNLUX is not a surface coating. It is applied with a rag, allowed to penetrate for several minutes, and then all the excess is wiped off.

Use:

To seal the porosity, densify, harden and immediately develop the color of colored cement or NEW terrazzo floors. Used on colored cement floors before waxing. Used to restore the true color and finish of new or old magnesite floors. After application, allow to dry overnight.

Covering Capacity:

Estimate approximately 800 to 1000 sq. ft. per gallon for new terrazzo or new magnesite floors.

Estimate approximately 400 to 600 sq. ft. per gallon for concrete or old magnesite floors.

Color: Light amber.

Packaging:

5-gal. pails

1-gal. cans (packed 4 to a case)

HORNGLAZE WAX

Description:

A liquid emulsion of carnauba wax, formulated to produce a self-polishing, tough, hard, water-resistant finish.

Use:

For use over linoleum, rubber, composition, cork, asphalt tile and hardwood floors. Is self-healing and will not scuff or become brittle. Permits dry-cleaning with stiff brooms. Where it is necessary to clean a floor prior to the application of HORNGLAZE WAX, we recommend the use of HORNGLAZE CLEANER.

Covering Capacity:

Approximately 2,000 sq. ft. per gallon, depending upon the type and condition of flooring.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half Drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

HORNGLAZE CLEANER

Description:

A liquid compound, specially designed to clean surfaces preparatory to receiving HORNGLAZE WAX. Acts not only as a proper cleaner, but also leaves the pores filled with a dry, hard residue, which means a saving in coverage per gallon when applying subsequent wax coatings.

Use:

Ideal for cleaning floors, walls and painted woodwork.

Covering Capacity:

Dilute with from 1 to 15 parts of water, depending on the strength required. When added to scrubbing water, use $\frac{1}{2}$ to 1 pint per gallon of water.

Color:

Milky white.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half Drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

HORNOLITH

Description:

A colorless liquid chemical applied to concrete floors. Designed to penetrate the cellular structure of concrete, and by chemical action to form a stronger bond of the concrete aggregate.

Use:

An after-treatment for dust-proofing and hardening concrete floors. NOT recommended for colored cement floors. Will NOT smooth a pitted floor. Does NOT produce a surface film.

Covering Capacity:

The average floor will require one gallon of HORNOLITH per 100 sq. ft. for two coats. Badly worn or soft floors may require additional coats.

Packaging:

Wood barrels (55-60 gals.)

Half Barrels (30-40 gals.)

5-gal. pails

This material is shipped only in wood containers.

MAINTENEX

Description:

A crystal, cleaning powder, specially formulated to meet the rigid requirements of buildings having heavy traffic. Dissolves completely in either hot or cold water, producing a change in color, thereby indicating the correct amount of MAINTENEX to use without waste or overdosing.

Use:

For cleaning hard (non-resilient) types of floors, including terrazzo, brick, concrete, slate, travertine, marble, tile, magnesite. Also designed to clean and strip wax coatings from linoleum, asphalt tile, rubber tile and wood floors. Used extensively by state institutions, office buildings, schools, department stores, hotels, apartment houses, chain stores, food processing plants, hospitals, banks, utilities, manufacturing plants, dairies, packing plants, etc.

Covering Capacity:

For ordinary use: 1 ounce per gallon of water.

For difficult cleaning: Increase proportion of MAINTENEX per gallon of water.

Color:

Pink.

Packaging:

325-lb. barrels

125-lb. kegs

COLORGLAZE

Description:

A specially compounded alkali-proof emulsion wax for improving the appearance of Colorundum or coloured concrete floors. The tough, dense finish developed by burnishing is resistant to traffic.

Use:

For concrete floor surfaces to deepen the color and to produce a dense, polished surface which is easily and economically maintained.

Covering Capacity:

Approximately 1000 sq. ft. per gallon.

Colors:

Red, green, brown, grey, natural.

Packaging:

5 gal. pails and 1 gallon cans packed 4 to a carton.

HORNOLITH No. 10

Liquid

Description:

A penetrating, clear, liquid floor hardener which corrects dusting and retards surface disintegration of concrete floors. Produces the desired hardness in the floor, at the same time filling the pores so that a dense surface is produced which polishes under traffic.

Use:

An after-treatment for concrete floors. Specifically designed to produce a harder, dust-proof and enduring surface highly resistant to disintegration. The floor surface should be clean and dry prior to the application of HORNOLITH NO. 10. If extensive oil spots exist they should be removed by scrubbing with strong alkali, rinsed and allowed to dry. Applied as it comes from the container. Not recommended for colored cement floors.

Covering Capacity:

The average floor will require one gallon of HORNOLITH NO. 10 per 100 sq. ft. for two coats. Badly worn or soft floors may require additional coats.

Packaging:

Drums (55-60 gals.)
Half drums (30-40 gals.)
5-gal. pails
Not packed in smaller containers.

HORNSTONE

A Chemical After-Treatment for Dustproofing and Hardening Concrete Floors

Description:

A concentration of magnesium fluosilicate and zinc fluosilicate in powder form. It reacts with the cement and lime to form new binding materials and new and harder compounds. The result is a flint-like surface which prevents dusting.

Use:

Mixed in the proportion of two pounds per gallon of water, the solution is flushed over the surface of the concrete floor with a mop or broom. The penetration which takes place, together with the chemical reaction, produces a hard, dense, wearproof surface which does not granulate or dust under traffic. Does NOT change the color of the floor. Does NOT smooth a pitted floor. Does NOT produce a surface film. Not recommended for colored concrete floors. Sufficient number of applications should be made to thoroughly saturate the surface. Dissolve HORNSTONE in the proportion of 2 lbs. per gallon of water.

Covering Capacity:

A soft porous floor allows greater penetration and requires more material than a hard, dense surface. Average floor requires two pounds per 100 square feet of area.

Packaging:

400-lb. barrels; 100-lb. kegs; 14-lb. cartons (packed 6 to a case).

NU-WAY RESURFACER

Description:

A ready-mixed mastic. Forms a tough, resilient, shock-absorbing dustless floor which is non-slippery and moisture-proof. Bonds perfectly to the surface to which it is applied.

HORN NU-WAY RESURFACER is shipped *ready-for-use*. It is a *complete material*, and therefore eliminates the possibility of failures resulting from the use of added ingredients lacking in uniformity or incorrectly proportioned.

Use:

For patching and resurfacing worn-out and broken concrete floors. To be used as it comes from the container.

Covering Capacity:

Approximately 40 to 45 square feet per 100 lbs., $\frac{1}{4}$ inch in thickness.

Colors:

Black, Grey.

Packaging:

225-lb. container*

325-lb. container*

*In each container is packed one gallon of NU-WAY PRIMER. Primer should be applied before application of NU-WAY RESURFACER.

P. D. Q. KONCREX

Description:

A pigmented liquid for application to concrete floors. Binds the surface particles together and forms a decorative wearing surface. Unaffected by the destructive alkaline reaction of cement, it retards the absorption of stains, oils and greases.

Use:

For interior concrete floors above grade. Not recommended for floors in direct contact with the earth. Should be applied in two coats for best results.

Covering Capacity:

P. D. Q. Koncrex (colors): Approximately 300 sq. ft. per gallon, one coat, depending upon porosity.

Transparent Koncrex: Approximately 300 sq. ft. per gallon, one coat.

Colors:

Bluestone Grey
Tile Red
Medium Grey
Dust

Light Grey
Mosaic Green
Brownstone

Black
White
Transparent

Packaging:

Drums (55-60 gals.)

Half Drums (30-40 gals.)

5-gal. pails

1-gal. cans (packed 4 to a case)

VIBRO-FOIL

Description:

A powder compound of iron and hardening elements to be mixed with Portland cement and sand. Produces a ductile, metallic mass which has a minimum shrinkage upon curing. The metallic aggregates, having "give and take" qualities, absorb vibration and withstand pounding and heavy wear. Produces water-resistant, oil-resistant and wear-resistant surfaces. The metallic particles in the grout oxidize as soon as the mixture is tempered, causing expansion within the mixture.

Use:

Used in grouting and setting heavy machinery. For efficient patching and resurfacing concrete floors, steel grid floors, loading docks and platforms, and grouting bolts in concrete. Recommended for topping, patching and repairing of concrete floors in dairies, creameries, food packing plants, breweries, laundries, canning plants, and floor areas subject to spillage of water and destructive liquids.

Estimated Requirements:

Materials required per 100 sq. ft. 1 inch thick.

For holes 1 foot in diameter or less:

- 200 lbs. VIBRO-FOIL
- 4 bags Portland Cement
- 6 cubic ft. of sand

For holes over one foot in diameter and larger areas:

- 50 lbs. VIBRO-FOIL
- 2 bags Portland Cement
- 3 cubic ft. of sand
- 4.5 cubic ft. $\frac{1}{4}$ inch aggregate

Packaging:

Packed in 100-lb. metal containers.

CRETE-FIX

Type A: A mastic to be mixed with Portland cement, sand and water.

Type B: A primer or bonding coat to be applied before application

Excellent for quickly and economically patching and reinforcing concrete holes and floors, producing a durable, waterproof and dust-proof patch with an actually superior surface. Not recommended for floors subject to contact with water, oils, grease, blood, fats, or floors constantly wet with liquids.

DUOCREX

An amber-colored liquid designed for application to wood and concrete floors, producing a durable, gloss finish.

Recommended for finishing gymnasium floors. Also available in Dull and Semi-Gloss for desks, furniture and trim.

FLOORKOTER

A pigmented coating for interior and exterior wood floors. Produces a protective and highly decorative surface. Easy to keep clean. A durable coating for exterior weathering and traffic wear.

45-11 STANDARD CLEANER

A concentrated liquid emulsion cleaner, to be diluted with water. This cleaner contains no oils or harmful ingredients. Designed to produce safer floors—eliminating the use of wax coatings. Cleans and seals in one operation, leaving a surface deposit which may be buffed without producing a slippery floor.

Particularly designed for efficient cleaning and maintenance of asphalt tile floors. Where no wax coating is desired, this cleaner is recommended for cleaning and maintaining resilient floors such as linoleum—rubber—cork—wood.

HORNBRITE

A concentrated liquid of creamy consistency for cleaning stone and composition floors. The hard, dry residue deposited in the pores permits easier cleaning after several treatments. It does not leave a surface film. Prevents pitting and chipping of terrazzo and makes unnecessary the use of such harmful cleaners as scouring powders, alkali cleaners, sweeping compounds, oil mops, or powder soaps. Contains bleaching elements which counteract the natural tendency of terrazzo and marble to "yellow" from age and traffic.

A maintenance material to be added to the scrubbing water for use on terrazzo, tile, marble floors, etc.

TREAD-SURE

A heavy-bodied, non-slip, granular coating to be applied to wood, concrete or steel floor surfaces subject to foot traffic.

For interior and exterior surfaces. Resistant to oil and water. Recommended for application around machines, ramps, stair-treads, walkways and other areas subject to slip hazards. NOT recommended for surfaces subject to heavy truck traffic.

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DEHYDRATINE 1

Description:

A block bituminous compound of heavy paint consistency, used as a dampproof coating for above-grade interior application.

Use:

May be applied by brush or spray to the interior surfaces of exposed exterior masonry walls—concrete, brick, terra cotta, cinder blocks and concrete blocks.

May also be used as a plaster bond for hardwall plasters (gypsum, lime, etc.). *Not recommended as a bonding coat for cement plasters.*

All mortar droppings shall be removed and walls shall be cleaned of all construction dust and dirt. All holes, cracks and open mortar joints shall be repointed with cement mortar and allowed to dry before dampproofing.

The application shall be a continuous unbroken film, free from pinholes or other surface breaks.

For best results on porous surfaces, a two-coat application is recommended.

Covering Capacity:

One coat: 80 sq. ft. per gallon.

Two coats: 50 sq. ft. per gallon.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

DEHYDRATINE 2 & 2A

A transparent liquid designed to protect stucco and masonry surfaces and to minimize water absorption and efflorescence.

Modern science has developed two standard types—Dehydratine 2A for use on light colored masonry, such as limestone, sandstone and light colored brick; Dehydratine 2 to be used on darker colored brick, stone, stucco or concrete in order not only to prevent absorption, but also to slightly deepen the color, thereby developing the texture.

Both types must be applied to dry, virgin, unpainted surfaces for protection against dampness, frost-spalling, acid fumes, efflorescence and absorption of dirt. All defective mortar joints should be cut and repainted with cement mortar. Structural cracks should be similarly treated. Apply in continuous applications until the saturation point is reached, or until the porous surface no longer absorbs the material. Successive coats should be applied immediately after each other.

DEHYDRATINE 2A

A colorless liquid which does not change the color or texture of the surface. Applied by brush or spray.

DEHYDRATINE 2

A transparent liquid which slightly deepens the color of the surface. Applied by brush or spray.

Covering Capacity:

Approximately 200 sq. ft. per gallon, per coat.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

DEHYDRATINE 3

Description:

A specially prepared, quick drying, black brushing compound, highly resistant to chemical reaction, to be applied to all UNEXPOSED surfaces of cut stone.

Use:

For protection of limestone and other light-colored stones from the stains caused by the percolation of dampness through the grain of the stone and to prevent discoloration on the face of the stone. The source of stone staining usually may be traced to the coloring matter and salts absorbed from the brick backing into the stone by saturation. Must be used as it comes from the package. Applied with a brush.

Covering Capacity: One Coat: Approximately 100 sq. ft. per gallon.

Packaging:

Drums (55-60 gals.)
Half Drums (30-40 gals.)

5-gal. pails.
1-gal. cans (packed 4 to a case)

DEHYDRATINE 4

Description:

A heavy-bodied black coating of brush consistency. Applied COLD as it comes from the container to the outside surface of masonry walls below-grade.

Use:

Excellent for the backs of parapet walls. Extensively used for substructural work to exclude seepage of ground water through below-grade foundations.

Covering Capacity: Two Coats: 33 sq. ft. per gallon.

Packaging:

Drums (55-60 gals.)
Half Drums (30-40 gals.)

5-gal. pails
1-gal. cans (packed 4 to a case)

DEHYDRATINE 6 MASTIC

Description:

A heavily-bodied black coating of trowel consistency, heavily reinforced with asbestos fibre, forming when set, a webbed water-resistant coating. Possesses maximum chemical resistance.

Use:

Recommended for below-grade surfaces, such as foundations, bridge abutments, retaining walls and concrete in direct contact with the ground. Excellent for use on uneven surfaces which cannot be effectively covered with a brush coating. Applied with a trowel after first priming surface with DEHYDRATINE No. 4.

Covering Capacity:

Approximately 26 sq. ft. per gallon, 1/16 inch thick.

Packaging:

Drums (55-60 gals.)
Half Drums (30-40 gals.)

5-gal. pails.
1-gal. cans (packed 4 to a case)

DEHYDRATINE 10

MASTIC

Description:

A black bituminous compound of trowel consistency, reinforced with asbestos fibres which form a dampproof coating. For above-grade interior application.

Use:

Bridges over cracks between the mortar and the bricks, fills holes and ensures a continuous coating. Also used in conjunction with HORN TRIPLEFLEX FABRIC in waterproofing of spandrel beams.*

May also be used as a plaster bond for hardwall plasters (gypsum, lime, etc.). *Not recommended as a bonding coat for cement plasters. Not recommended for use on concrete, terra cotta or tile.* Ideal for brick or under furring. Its thickness insulates; reduces condensation or "sweating."

All mortar droppings shall be removed and walls shall be cleaned of all construction dust and dirt. All holes, cracks and open mortar joints shall be repointed with cement mortar and allowed to dry before dampproofing.

The application shall be a continuous unbroken film, free from pinholes or other surface breaks.

A one-coat application is usually sufficient

Covering Capacity:

Estimate approximately 26 sq. ft. per gallon coating 1/16 inch thick.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

*Specifications for SPANDREL BEAM WATERPROOFING will be sent upon request.

DEHYDRATINE 10

SEMI-MASTIC

Description:

A black bituminous compound of semi-liquid consistency, reinforced with asbestos fibres which form a dampproof coating. For above-grade interior application. Particularly recommended over corrugated hollow tile walls since their surface does not permit use of a mastic.

Use:

Applied with a roofing brush to the interior surfaces of exposed exterior masonry walls—concrete, brick, terra cotta, cinder blocks and concrete blocks.

May also be used as a plaster bond for hardwall plasters (gypsum, lime, etc.). *Not recommended as a bonding coat for cement plasters.*

All mortar droppings shall be removed and walls shall be cleaned of all construction dust and dirt. All holes, cracks and open mortar joints shall be repointed with cement mortar and allowed to dry before dampproofing.

The application shall be a continuous unbroken film, free from pinholes or other surface breaks.

A one-coat application is usually sufficient.

Covering Capacity:

Approximately 30 sq. ft. per gallon, one coat.

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

DEHYDRATINE 80

✓
3-15 gal.

Description:

A concentrated, colorless, chemical solution which is added to the water used to hydrate cement. Develops both the initial and final set in less than one-half the usual time. Doubles the compressive strength at end of the day. Produces wear-resistant concrete floors. Lowers freezing point in winter. Densifies through increased hydration and plastercizing.

Use:

Liquid integral hardener used in concrete for early strength; in brick mortar in cold weather as anti-freeze; and to reduce labor.

Mixing Proportion:

Estimate one quart for each bag of cement in the mix.

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

DRY CEMENT COLORS

Description:

High grade, powdered, metallic colors that are not affected by the alkalinity of lime, cement or the actinic rays of the sun.

Use:

For coloring concrete and cement or lime mortar, such as concrete floors, concrete walls, sidewalks, cement and lime brick mortar.

Colors	Average Mixing Proportion Per Bag of Cement
Tile Red	8 lbs.
Mexican Red	8 lbs.
Persian Yellow	5 lbs.
Alaskan Brown	5 lbs.
Linoleum Brown	5 lbs.
China Blue	5 lbs.
Egyptian Green	5 lbs.
Black Metallic Oxide	5 lbs.
Horn Non-Metallic Black	4 lbs.

Estimated Requirements:

Quantity per 1,000 sq. ft. of 1-inch topping in a 1:2 mix: 40 bags of cement with 200 lbs. of Alaskan Brown, or 160 lbs. Horn Non-Metallic Black, etc.

Packaging:

All colors (except Non-Metallic Black) packed in 400-500 lb. barrels and 100-lb. kegs. Non-Metallic Black packed in 50-lb. containers only.

EXPANSION JOINT CEMENT

Description:

A solid black asphalt processed in conjunction with vulcanized oils. Bonds well to sides of joint and remains flexible and elastic from zero degrees to 160 deg. Fahr. to maintain a water-resistant joint. The technical specification is as follows:

Melting Point (B & R).....	165/200 deg. F.
Pen. at 77 deg. F. 100 grs. 5 secs.....	20/50
Loss on heating at 325 deg. F.....	1 1/2 %
Loss on Pen. from above.....	60% min.
Ductility @ 77 deg. F. cm.....	3 min.
Bitumen Content	65% min.
Ash on incineration.....	10/28%

Use:

Must be heated and poured hot. For use in expansion joints in concrete or masonry construction, in vault lights, sidewalk building line joints. The sides of the joints should be primed with Dehydratine No. 4 before applying the joint cement.

Covering Capacity:

231 cubic inches of joint require one gallon.

1 gallon Dehydratine No. 4 required for each 7200 sq. inches of surface to be primed.

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

HORN NO-FREEZE

Description:

A colorless, rectified solution of maximum strength, having a density of 32 deg. Beaume. Lowers the freezing point of the gauging water and increases the speed of the set of cement mixtures.

Use:

Permits the pouring of cement, the laying of brick in cement mortar, and the laying of concrete floors in winter. NO-FREEZE will increase the early strength of concrete.

Mixing Proportion:

Anticipated Setting Temperatures	Mix
32 deg. Fahr.....	1 gal. NO-FREEZE to 15 gals. of water
28 deg. Fahr.....	1 gal. NO-FREEZE to 12 gals. of water
23 1/2 deg. Fahr.....	1 gal. NO-FREEZE to 9 gals. of water
22 deg. Fahr.....	1 gal. NO-FREEZE to 8 gals. of water

Not recommended for use in temperatures below 22 deg. Fahr.

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

HYDRATITE

Paste, Powder and Liquid

HYDRATITE is a scientifically formulated stearate compound to be added to cement mixes to make concrete, stucco, cement plaster and cement mortar resistant to water penetration.

When the paste stearate compound is added to Portland cement mixes, calcium stearate is formed. This insoluble material acts as a lining on the side walls of the pores or voids in the mass, producing negative capillarity. In this manner, absorption of water by capillary attraction is reduced.

The question of whether integral waterproofing should be used in paste, powder or liquid form is usually decided by local preference and common usage. Each of the three forms produces the same results. The advantage of the liquid form is that it may be most convenient to measure. The advantage of the paste lies in the uniform distribution, since it is miscible in water.

HYDRATITE PASTE

Description:

A concentration of ammonium stearate in a smooth, white paste form. Makes concrete and mortar water-resistant, preventing absorption of water by capillary attraction. When added to the cement mix, the lime combines with it and forms a calcium stearate. HYDRATITE PASTE represents the original patent for the use of ammonium stearate, and is the acknowledged standard for quality, concentration and reliability.

Use:

Poured concrete, brick mortar, cement stucco, cement plaster, concrete floors. It is recommended that where *hand mix* is used, cement and aggregate be mixed dry, a small amount of water added and mixed, then the HYDRATITE PASTE added, after which the necessary amount of water is added to obtain the desired consistency. . . . Where *machine mixers* are used, HYDRATITE PASTE may be added directly to the mix.

Mixing Proportion:

Add 2 lbs. for each bag of cement in the mix.

Estimate 8 lbs. or 1 gal. per 100 sq. ft. of 1" floor topping.

Estimate 12 lbs. or 1½ gals. per cu. yd. of 1-2-4 concrete.

Packaging:

Drums (400 lbs.)

5-gal. pails (40 lbs.)

Half drums (240 lbs.) 1-gal. cans (8 lbs.) packed 4 to a case

HYDRATITE POWDER

Description:

A dry white powder of stearate content, to be added to dry cement and sand mix. Makes concrete and mortar water-resistant, reducing absorption of water by capillary attraction.

Use:

Poured concrete, brick mortar, cement stucco, cement plaster, cement mortar, concrete floors. Particularly suitable for use in ready mixed cement.

Mixing Proportion:

Add 2 lbs. for each bag of cement in the mix.

Requires 8 lbs. per 100 sq. ft. of 1" floor topping.

Requires 12 lbs. per cu. yd. of 1-2-4 concrete.

Packaging:

Packed only in 50-lb. bags.

HYDRATITE LIQUID

Description:

A white, creamy fluid containing a stearate compound, to be added to the gauging water or wet mix of cement and sand. Makes concrete and mortar water-resistant, preventing absorption of water by capillary attraction.

Use:

Poured concrete, brick mortar, cement stucco, cement plaster, concrete floors. Add part of the gauging water to the mix and turn over a few times, then add the HYDRATITE LIQUID, after which more gauging water is added in the necessary amount to obtain the desired consistency.

Mixing Proportion:

Add one quart per bag of cement in the mix.

Estimate one gallon per 100 sq. ft. of 1" topping.

Estimate 1½ gallons per cu. yd. of 1-2-4 concrete.

Packaging:

Drums (55-60 gals.)

Half Drums (30-40 gals.)

5-gal. pails

1-gal. cans (packed 4 to a case)

METALON

Description:

A finely graded metallic powder, chemically processed. The addition of water results in the oxidation of the particles of metal, and a consequent expansion of these particles in the pores of the masonry. The METALON mix, scrubbed into the pores or minute openings of a concrete surface, functions by oxidation (rusting) and expansion, acting like a tightly fitting cork in the neck of a bottle.

Use:

For use with cement on interior and exterior surfaces to make concrete floors, brick walls, and other masonry surfaces, highly water-resistant under hydrostatic pressure. Also used to repair fractures on exterior concrete surfaces. Usual procedure is to thoroughly roughen the surface of the concrete by hacking, to open up the pores. Then clean the surface, wet it down and scrub in the first coat consisting of a thin paste formed by adding water to METALON. Allow to oxidize for 24 hours. The second coat consists of equal parts by volume of Portland Cement and METALON, thinned with water to a paste of heavy cream consistency. Succeeding coats are mixed and applied the same as the second coat. Allow each coat to oxidize for at least 24 hours. Each coat shall be kept damp to insure thorough oxidation.

It is essential to keep mixture stirred while applying. Five coats are usually sufficient, except for extremely heavy pressure work where additional coats may be required.

Covering Capacity:

Estimate 60 lbs. per 100 sq. ft. for the five coats.

Color:

Natural Grey

Packaging:

100-lb. containers

20-lb. containers

HYDRATITE PLUS

FOR WATER-RESISTANT MORTAR JOINTS TO REDUCE MORTAR



NATIONAL BUREAU OF STANDARDS Report No. BMS 7 states . . .

"A mortar showing a low value for flow after suction is not satisfactory . . ." "The less absorption by brick suction, the less permeable the masonry."

Tests of HYDRATITE-PLUS by Columbia University, Robert W. Hunt Company, Texas Testing Laboratory, United States Testing Company, and others over a period of time bring out many interesting statistics regarding improved adhesion, checking of efflorescence, increased strength and plasticity. MOST IMPORTANT OF ALL, HYDRATITE PLUS REDUCES WATER ABSORPTION AND REDUCES INITIAL SHRINKAGE. HYDRATITE PLUS is a concentrated powder which, when added to brick mortar, greatly reduces amount of water required. The increased plasticity PLUS its water retention after "spreading" the mortar on a course of porous brick promotes labor saving and tight brick walls.

HYDRATITE PLUS anchors the particle of water intimately to the cement, sand or lime particle with a bond greater than the suction of the brick. It increases the "wettability" of the water, thereby requiring much less water to achieve the same "flow" or workability of the mortar.

Specifications: The 1-1-6 brick mortar of 100-110 flow with or without admixture must retain 80% of the original flow after suction under Federal Specification SS-C-181b. HYDRATITE PLUS is approved as admixture under directions of the manufacturers, A. C. HORN COMPANY.

Covering Capacity: 2 lbs. per bag of cement in 1-1-6 mortar, added to the dry mix.

FIELD LABORATORY:

**OVER 50,000,000 SQUARE FEET
OF WALLS TREATED IN 13 YEARS**

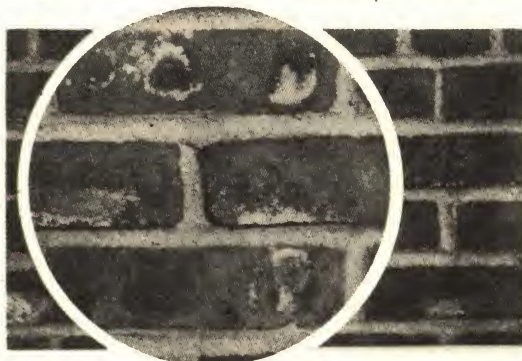
HYDRATITE PLUS

SHRINKAGE AND BRICK ABSORPTION

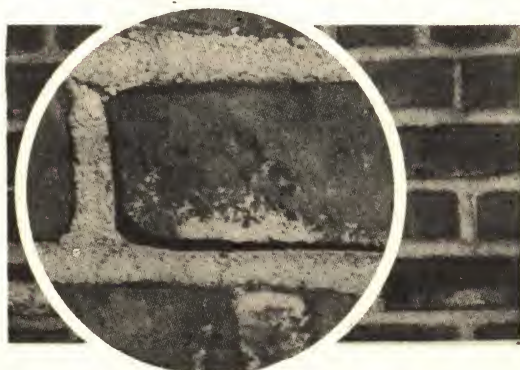
Why Even the Finest
Brick Walls Leak



THIS IS AN AVERAGE WALL THAT
LOOKS LIKE GOOD BRICKWORK
Efflorescence (white spots) indicates leakage.



UPON MAGNIFICATION
Many cracks become visible



UPON GREATER MAGNIFICATION
The vertical joint is found to be
open on BOTH sides.

These are actual unretouched photographs of a brick wall on a prominent structure, having an exterior area of more than 100,000 square feet. Over 30% of the joints were in the cracked condition illustrated.

STAYBRITE

Description:

A combination of coloring and water-resistant compounds. The colors have maximum tinctorial strength and are non-fading. The function of the water-resistant element is to minimize efflorescence and the usual grey masking of colored concrete work.

Use:

For coloring concrete and cement or lime mortar, such as concrete floors, concrete walls, sidewalks, cement and lime brick mortar. STAYBRITE comes packed in paper bags of the exact weight required per bag of cement; this eliminates the necessity for weighing color at job site, and insures uniformity of color. Due to the high tinctorial strength of STAYBRITE, only small quantities are required, which results in low cost and non-weakening of mortar.

Colors	Mixing Proportion	
	Packed in Cartons of	Per Bag of Cement
Tile Red	10-8 lb. bags	8 lbs.
Horn Non-Metallic Black	25-2 lb. bags	4 lbs.
Persian Yellow	16-5 lb. bags	5 lbs.
Alaskan Brown	16-5 lb. bags	5 lbs.
Linoleum Brown	16-5 lb. bags	5 lbs.
China Blue	16-5 lb. bags	5 lbs.
Egyptian Green	16-5 lb. bags	5 lbs.

—NO JOB MEASUREMENT

—NO WASTAGE

—NO SPILLAGE

Estimated Requirements:

Quantity per 1,000 sq. ft. of 1-inch topping in a 1:2 mix: 40 bags of cement with 200 lbs. Linoleum Brown, or 320 lbs. Tile Red, etc.

To lay 10,000 bricks in a 1:3 mix: 40 bags of cement with 320 lbs. of Tile Red, or 200 lbs. of Alaskan Brown, etc.

VITAMIX

Description:

A dark-colored, concentrated liquid chemical compound. Increases flowability of cement. Reduces shrinkage, absorption and segregation of cement. The use of VITAMIX reduces the amount of gauging water required. Consequently, there is less water to evaporate. This reduces the porosity of the concrete mass, with a resultant increase in the density and strength of the concrete.

Use:

For poured concrete. To promote activation of *all* cement at time of use.

That cement possesses latent powers is a well-known technological fact. To awaken or activate these powers has long been the goal of scientific research, in order that they may be used to the best advantage . . . Just as the addition of a minute quantity of harmless vitamins stimulates the human system, so does the addition of a relatively tiny quantity of VITAMIX stimulate the ever-present dormant powers of cement.

Mixing Proportion:

Exactly four ounces of VITAMIX to each bag of cement, added to wet mix of cement, sand, and gravel or gauging water.

Packaging:

Drums (55-60 gals.)

1-gal. cans (packed 4 to a case)

PAINTS AND COATINGS

Interior

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Horn Super Fume Proof Enamel Undercoater.....	49
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Horn-Namel	50

HORN-O-TONE

S-P-F

Description:

An ultra-modern, interior flat wall finish that seals, primes and finishes in one operation. A tough and durable oil paint that has excellent hiding and covering capacity.

Use:

HORN-O-TONE is highly recommended for the interiors of

SCHOOLS	HOUSING PROJECTS
HOSPITALS	OFFICE BUILDINGS
HOTELS	COMMERCIAL BUILDINGS
INDUSTRIAL PLANTS	

The outstanding feature of HORN-O-TONE is its non-penetrating property—so important when painting porous surfaces, such as plaster, wall-board, concrete surfaces, brick, wood, cinder blocks. It may also be used over clean, firm surfaces previously painted with calcimine, water thinned paint, resin emulsion paint, whitewash. HORN-O-TONE is easy to apply—no wrist strain. One coat is as good or better than a coat of undercoat or size, plus a coat of flat wall paint.

Covering Capacity:

Approximately 400 sq. ft. per gallon, one coat, depending upon the porosity of the surface:

Colors:

White	Buff	Green
Cream	Grey	Tan
Ivory	Blue	Coral

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

HORN SUPER FUME PROOF ENAMEL

GLOSS AND SEMI-GLOSS

Description:

An interior finish for walls and ceilings, manufactured in gloss and semi-gloss. Particularly designed to retain its whiteness longer than ordinary white enamels. Has excellent hiding and light-reflecting properties.

Use:

Recommended for painted and unpainted interior surfaces in

Abattoirs	Cotton and Textile Mills
Aircraft Plants	Dairies
Ammunition Plants	Food Processing Plants
Bakeries	Hospitals
Beverage Plants	Ice Plants
Bottling Plants	Ice Cream Plants
Candy Plants	Laundries
Canneries	Meat Packing Plants
Chemical Plants	Warehouses

NOT recommended for painting machinery or equipment.

NOT recommended for painting surfaces subject to spillage of acids.

HORN SUPER FUME PROOF ENAMEL is easily applied, flows easily, and does not have the "pull" which is characteristic of many industrial wall paints.

Recommend SUPER FUME PROOF ENAMEL UNDERCOATER to be applied prior to application of SUPER FUME PROOF ENAMEL.

May be readily washed and scrubbed. Dries dust-free in four hours, and hardens within 24 hours. Applied by brush or spray.

Covering Capacity:

Approximately 400 sq. ft. per gallon, one coat.

Color:

Made in white only.

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

HORN

One-Coat House Paint

Description:

A one-coat repainting finish, embodying the latest technology in opacity, durability, whiteness and ease of application. For general exterior use as a house paint, and particularly for repaint work as a one-coat labour saving finish.

Use:

On unpainted surfaces or such as are badly weathered and have had old scaling paint removed by scraping or sanding, the first coat should be Hornac Non-Penetrating Primer before painting the entire surface with One-Coat House Paint. Better appearance, protection and longevity are obtained from this two-coat system on unpainted surfaces than from the ordinary three-coat method; and for repaint work, the great opacity of One-Coat House Paint assures highly satisfactory and great labour saving results. Except for the use, when necessary, of not more than a half pint per gallon of turpentine, or of colors in oil, no thinning oils, paint oils or other paint may be added.

Covering Capacity:

Supplied in white only. Approximate covering capacity, 600 sq. ft. per gallon.

Packaging:

5 gal. pails
1 gal. cans packed 4 to a case.



HORN

10.50 gal

Florcrex and Duocrex For Gymnasium Floors

Colleges, schools, Y.M.C.A.'s and W.W.C.A.'s may enjoy immaculate appearing wood floor surfaces in their gymnasiums free from black marks that permanently mar the ordinary floor treatments.

The Horn System is in two parts for the conditioning of gymnasium floors.

FLORCREX:—This light amber colored vehicle is spread over the surface of the newly sanded wooden floor. It functions from the surface down. To the thickness of its film, it fills the cellular structure of the wearing surface so solidly, that it acts as a barrier against the ingress of traffic grime. Applied over small areas at a time, the applicator, after a lapse of 15 minutes following application, wipes any excess from the surface with clean dry rags. Florcrex hardens within a few hours' time.

The Game Lines are then applied.

DUOCREX:—This is the finishing coat. It is amber colored and looks like varnish, but being a chemical compound, it is much tougher, too tough to be permanently marred by the sneakers worn by the players. After it has dried hard the resulting surface is one that may be kept immaculate and attractive by merely dusting off, or washing.

Duocrex is applied in two thin brush coats, allowing an overnight period between applications.

Over hardwood floors the covering capacity of Florcrex is approximately 500 sq. ft., and of Duocrex approximately 400 sq. ft. per gallon, per coat.



HORN

Ayr-Trap

3.00 gal

Description:

An air-entraining agent for concrete and cement mortar, to increase their life by preventing disintegration due to weather exposure. Ayr-Trap makes a more durable concrete.

Use:

1. For concrete roads and sidewalks.
2. In concrete for exposed structures, dams, bridges and buildings.
3. To increase workability of concrete and mortars.
4. To reduce bleeding of concrete and to minimize segregation.
5. To reduce water-cement ratio.
6. To minimize spalling caused by temperature changes.

Quantity Needed:

$\frac{1}{2}$ Fluid ounce per bag of cement. $\frac{3}{4}$ pint to 5 cubic yards of concrete or 3 ounces per cu. yd. in a 1:2:3 mix. (Canadian measures, not U.S. are indicated.)

Packaging:

45 gallon drums and 5 gallon pails.

HORN

A. E. Dispersed Black

Description:

A heavy liquid colour admixture for concrete and cement mortar—a readily miscible carbon black dispersion, non-tacky, non-bleeding and non-fading.

Use:

For admixture in non-air entrained or air entrained concrete. Does not nullify air entrainment in concrete. Produces concrete in solid black or in desired greys to provide eye-appeal and distinctive appearance. Darkened concrete eliminates glare, eye strain and reduces road hazards. Surface cracking is reduced because of more equal surface temperatures. Snow and ice melt more quickly. Does not reduce compressive or flexural strength and increases freezing—thawing resistance. Recommended for highways, bridges, sidewalks, airport runways, etc.

Quantities Needed:

Light Grey	1 lb.	per bag of cement
Medium Grey	2 lbs.	" " " "
Dark Grey	4 "	" " " "
Black	8 "	" " " "

Packaging:

500 lb. drums and 55 lb. pails.

HORN

Duocoat

Description:

An oil paint in semi-paste form. To be thinned with Turpentine or Turpentine Substitute. Controlled penetration on surfaces of average and uniform porosity. Eliminates sizing or sealing. One coat application results in a rich, flat finish.

Uses:

Recommended for use over previously painted surfaces, new plaster, calcimine, casein paint, wall-board, brick, concrete.

Covering Capacity:

Must be thinned to proper brushing or spraying consistency. Approximate covering capacity, one coat after thinning, 500 sq. ft. per gallon.

HORN-NAMEL

Gloss and Semi-Gloss

Description:

A wall enamel in gloss and semi-gloss, specially designed for use on interior walls, ceilings and trim work where a high quality durable and washable finish is desired. Provides easy brushing, medium drying and tough rather than brittle hard film.

Uses:

For interior surfaces of concrete, plaster brick, metal, wall-board and wood. Should be applied over Horn Enamel Undercoater.

Covering Capacity:

Approximately 500 sq. ft. per gal. one coat, according to condition and type of surface.

Colours:

Ivory White, Ivory, Green, Buff, Yellow, Azure Blue, Spanish Blue, Nile Green, Emerald Green, Oyster White, Pearl Grey, Light Lead, Slate, Tobacco Brown, Black and White.

Packaging:

5 gallon pails
1 gallon cans (Packed 4 to a case).

HORN

SUPER FUME PROOF ENAMEL UNDERCOATER

Description:

An excellent enamel undercoater, especially recommended for use with SUPER FUME PROOF ENAMEL. Dries to a smooth, flat, uniform finish.

Use:

On previously painted or unpainted interior surfaces, as a foundation coating for all enamels. Applied to wood, concrete, brick, plaster.

Covering Capacity:

Approximately 300 to 400 sq. ft. per gallon.

Color:

Made in white only.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

ENAMEL UNDERCOAT

A flat white coating designed to form a hard, firm foundation for use under enamel. Non-absorbent, dries smoothly, evenly and without brush marks. Recommended for use over wood, plaster and wall board.

INTERIOR TANK COATING

A black homogeneous emulsion of uniform and stable consistency, designed for brush application to interior surfaces of water tanks. Produces a protective non-toxic elastic coating. Does not dry hard or brittle. Does not taint, and imparts no taste to drinking water. Designed so that the coating, after it has dried thoroughly, is not affected by continuous contact with water.

Recommended for protection against corrosion, pitting, rust and fungus growth inside concrete and steel water tanks. Does not produce disagreeable odors or dangerous gases during application. Coating must be allowed to dry firm—at least 48 hours—before refilling tank with water. To accelerate drying, tank should be well ventilated during application of coating, using forced ventilation if necessary.

SUPER STREAMLITE

A semi-paste, resin emulsion paint, to be thinned with water. Exceptional hiding and coverage. Dries in 30 minutes. No offensive paint odor. White has 91 per cent light reflection.

Recommended for use over previously painted surfaces, new plaster, concrete, wallboard, brick. Thin with water to brushing or spraying consistency.

PAINTS AND COATINGS

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REXIDE

Description:

An extremely durable coating for the preservation, protection and decoration of exterior surfaces. Composed of selected asphalts blended with treated oils and pigments. Dries with a hard, tough, elastic film that gives maximum service under difficult conditions. May be applied (by brush or spray) to metal, concrete, brick and wood surfaces.

Use:

For practically any and every weather-exposed surface where protection from moisture, rust and decay is desired at moderate cost. For best results on metal surfaces a rust-inhibitive primer, such as GALVANIDE, should be applied prior to the application of REXIDE.

Recommended for:

Barns	Gutters and Copings
Brick Buildings	Iron Pipes
Bridges	Metal Sidings
Concrete	Mine Equipment
Cornices	Rolling Mills
Elevated Railroads	Roofs
Factories	Stand Pipes
Fences	Storage Tanks
Gas Holders	Structural Steel
Grain Elevators	Warehouses
Gas Pipes	

Covering Capacity:

One coat: 300 to 400 sq. ft. per gallon.

Two coats: 200 sq. ft. per gallon.

Colors:

Red, Maroon, Dark Brown, Medium Brown, Light Green, Moss Green, Standard Grey, Medium Grey, Black.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half Drums (30-40 gals.)

1-gal. can (packed 4 to a case)

SYMENTREX

Description:

An exterior liquid coating that combines color with the ability to resist the attack of the alkali elements in the surface to which it is applied. Especially designed to retard moisture penetration.

Use:

Painted and unpainted exterior concrete, brick and stucco surfaces. Structural cracks and disintegrated masonry joints should be repaired and repointed before treating with SYMENTREX. Surfaces to which SYMENTREX is applied must be clean and dry. On porous surfaces apply a first coat of HORN Non-Penetrating Primer, followed by one or two coats of SYMENTREX.

Covering Capacity:

First coat: 200 sq. ft. per gallon.

Second coat: 300 sq. ft. per gallon.

Colors:

Cream	Ivory	Buff
Light Grey	Cement Color	Sandstone
Grey	Drab	Red
White	Slate	

Packaging:

Drums (55-60 gals.)

Half drums (30-40 gals.)

5-gal. pails

1-gal. cans (packed 4 to a case)

WATERFOIL

A Unique Preservative Treatment for Exterior Masonry Surfaces

Description:

An irreversible inorganic gel which hardens into a coating of microscopic sponge-like character and practically "welds" itself, mechanically and chemically, into the minute voids of concrete, stucco or brick surfaces. WATERFOIL is not just a coating, like paint; it becomes an integral part of the masonry itself, forming a microscopically fine-textured protective surface. WATERFOIL is neither a water paint nor an oil paint; it contains no linseed oil, casein, resin emulsion, volatile thinners or cement. WATERFOIL produces a film which permits the escape of entrapped moisture from masonry walls, and impedes the penetration of water. It prevents reinforcing bar rust and spalling of concrete surfaces. It lengthens the life of masonry materials and beautifies structural surfaces. The attractive colors and the smooth, flat texture make WATERFOIL an ideal coating for masonry surfaces.

Use:

Used for new buildings and for renewing the appearance of old buildings at low cost. *Cannot be applied over a previously painted surface.* Can be easily applied by any careful workman after surface cracks and masonry defects have been repaired. Applied to clean, dry, virgin surfaces with a stiff scrubbing brush for first coat, and with a large whitewash brush for second coat. WATERFOIL vehicle and pigment should be mixed together in equal proportions by volume. No primer is necessary.

Covering Capacity:

Approximately 100 sq. ft. per gallon, per coat.

Colors:

Cream, Buff, Cement-Grey, Grey, Brick-Red, White.

Packaging:

In standard units comprising the proper amount of pigment and vehicle which, when mixed together on the job, yield 7½ gallons of WATERFOIL, ready for application.

BRIDGE & GUARD RAIL PAINT

It is generally agreed that white paint possesses a very high efficiency in rendering highway markers visible by night. A bridge, at night, is made visible to a driver in an approaching automobile primarily by means of light from the headlights which have been reflected back along the road by the exposed surface of the bridge structure. The more light reflecting power these surfaces have, the greater will be the quantity of light turned back in the direction of the approaching car.

As a result, the driver will be able not only to see the structure distinctly at greater distances, but the bridge will stand out with greater visibility.

White has the highest diffused light reflection value of all of the colors and, therefore, gives the best visibility.

GRAPHITE PAINT

An excellent rust-inhibitive coating produced from carefully selected graphite pigment and treated oils. The paint film insures protection against the corrosive action of electrolysis.

Prevents rusting, and resists the action of gases and acid fumes.

KOPPER KARBOL SHINGLE STAIN

A creosote and copper oleate solution for preserving and coloring shingles. Resists growth of fungi and other parasites. Helps protect wood against attacks by insects and dry rot.

For wood shingles and wood siding. Should not be used on wood that is to be painted.

TRAFFIC & ZONE PAINT

A scientifically designed traffic paint formulated to meet the severe requirements of highways and roads. Has high visibility. Dries hard and tough.

For highways, marking floors in factories, driveways, etc. May be applied by brush or by road-marking equipment.

HORNAC

A scientifically prepared product, designed to produce a tough, elastic coating that will give the maximum in protection and decoration to exterior wood surfaces, painted or unpainted. For best results apply one coat of Hornac Non-Penetrating Primer, followed by one coat of HORNAC.

HORNAC NON-PENETRATING PRIMER

A primer for exterior wood surfaces (painted or unpainted). It produces in one coat the same results as with two coats of ordinary house paint. The oil in the Hornac Non-Penetrating Primer is not all sucked up by the thirsty wood. "Regulated penetration" keeps most of the oil with the pigment and that's where it does the most good. Hornac Non-Penetrating Primer may be best described as a prime coat and undercoat in one.

Used to provide a base coat which seals the pores in wood without penetrating too deeply. Keeps the oil in the paint film where it belongs.

PAINTS AND COATINGS

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GALVANIDE

Description:

*GALVANIDE is one of the most effective primers for metal surfaces. Provides a durable, impervious paint film which not only protects metal against corrosion, but actually inhibits rust. In other words, it stops rust before it starts. Its unusual covering capacity provides the lowest cost per square foot of surface when compared with metal primers sold at lower cost per gallon.

Use:

Recommended as the first coat on the following:

METAL BUILDINGS	ORNAMENTAL IRON
FENCING AND GATES	TRANSMISSION TOWERS
METAL ROOFING	SILOS
MINING EQUIPMENT	PIPES
LAMP POSTS	CONVEYORS
WATER TANKS	ENGINES
BRIDGES	GAS HOLDERS
FANS AND BLOWERS	CULVERTS

GALVANIDE possesses unsurpassed adherence or "sticking" power, and when properly applied is entirely free from the "checking" and peeling so frequently observed with less suitable paints.

GALVANIDE maintains an unbroken, durable, protective coating. It dries to a firm film, does not crack even after years of service, and retains its color.

To be applied as a prime coat on dry, clean metal surfaces. Horn Industrial Enamel, Horn Rexide and Horn Aluminum Paints are recommended as finish coats.

Covering Capacity:

Approximately 700 to 800 sq. ft. per gallon, one coat (nearly double the coverage of ordinary paints).

Color:

Battleship Grey.

Packaging:

1-gal. buckets, packed separately. One gallon weighs approximately 23 lbs.

*Zinc in the form of galvanizing, is stated by the U. S. Bureau of Standards (Circular 80) to be "by far the best" protective metallic coating for the rust-proofing of iron and steel.

HORN HEAT RESISTING Paint, Black

Description:

A black paint that is highly elastic and heat resisting. Dries with a high gloss. Especially made for use on smoke stacks, boiler fronts, etc. Impervious to heat and cold, providing protection against rust. It is the ideal coating for surfaces of this nature. Withstands heat up to 600 deg. Fahr.

Use:

For use on boiler fronts, metal stacks, steam lines, hot water lines, locomotive fronts, radiators, walls, ceilings, roofs and other surfaces, exterior and interior, subjected to heat or quick changes in temperature. Metal surfaces must be cold when applying HORN HEAT RESISTING PAINT.

Covering Capacity:

Approximately 300 to 400 sq. ft. per gallon, per coat, depending on the surface.

When ordering be sure to state whether this product is to be used on stacks, on boiler fronts, or on both.

Packaging:

Drums (55-60 gals.)
Half drums (30-40 gals.)

5-gal. pails
1-gal. cans (packed 4 to a case)

HORN HIGH HEAT RESISTING Paint, Grey

Description:

A high heat resisting coating having the dual function of efficient heat resistance and protection of metal against corrosion. Attains maximum heat resisting efficiency at temperatures between 900 and 1100 deg. Fahr., at which temperature range the metallic particles become fused to the surface to which the paint is applied. Weight: approximately 18 pounds per gallon.

Use:

For boiler fronts, smoke stacks and other surfaces subject to heat or quick changes in temperature. HORN HIGH HEAT RESISTING GREY fuses to the clean metal it protects. This action is known as "sherardizing" and is important in such applications as tuyere pipes of blast furnaces and flue boxes of steam plant stacks. Metal surfaces must be cold when applying HORN HIGH HEAT RESISTING PAINT.

Covering Capacity:

Approximately 500 sq. ft. per gallon on smooth metal surfaces.

Packaging:

5-gal. pails

1-gal. cans (packed 4 to a case)

HORNOTOL

Description:

A black, tough, corrosion-resisting coating, designed primarily to protect steel, concrete and masonry surfaces against chemical fumes, gases, acids, sewage, smoke, cold, rust, brine, ammonia, alkalies, salt spray, soot. (HORNOTOL is *not* an asphalt paint.)

Use:

On interior and exterior steel, concrete and masonry. HORNOTOL is extensively used to protect the surfaces of expensive metal and concrete equipment immersed in Imhof tanks, filter beds, sludge tanks, settling chambers, sprayers, digesters, etc. Also used in filtration plants, bleacheries, laundries, tanneries, etc. Applied cold with a brush. Longer drying allowed between coats gives better results. Two coats are recommended. Do not thin with turpentine, benzine or other petroleum distillates; if thinning is necessary, use Xylol or Toluol.

HORNOTOL is NOT recommended for surfaces subject to high heat.

Covering Capacity:

On concrete and masonry: Approximately 200 sq. ft. per gallon, per coat.

On steel: Approximately 400 sq. ft. per gallon, per coat.

Packaging:

Drums (55-60 gals.)	5-gal. pails
Half drums (30-40 gals.)	1-gal. cans (packed 4 to a case)

HORNROCK

Description:

A powder composed of inorganic, cementitious compounds which adhere to and become an integral part of the surfaces to which it is applied. Mixed with water to produce a decorative, water-resistant coating for virgin concrete and masonry walls.

Use:

For interior and exterior masonry surfaces that have not been painted or coated. May be applied to damp, masonry surfaces above or below grade.

All masonry surfaces must be wet with water before applying HORNROCK, and again moistened with water after the application to insure proper curing of the coating.

In applying HORNROCK to smooth masonry surfaces, it is important to acid-etch the surface to insure proper bond.

HORNROCK is water-resistant in that it will not wash off or be affected by dampness.

NOTE: HORNROCK cannot be applied to plaster, or painted or coated surfaces.

Covering Capacity:

Mixed in the proportion of 8 lbs. per gallon of water, HORNROCK will cover 125 sq. ft. per gallon, 2 coats.

Colors:

White	Buff	Brick Red
Blue	Stone Grey	Dark Brown
Light Green		

Packaging:

100-lb. drums

10-lb. cans (packed 4 to a case)

ACID RESISTING COATING

Black

An elastic waterproofing paint made for use on metal surfaces where an elastic and quick-drying, acid-resisting finish is required. Resistant to alkali, acid and gas fumes. Made from quality gums and specially treated oils. Produces a jet black, gloss coating.

Recommended for fire escapes, metal roofs, metal frames, pipes, interiors of metal tanks, and all metal objects where a quick-drying gloss paint is required.

HORN ALUMINUM PAINT

An aluminum paint that is superior. Complete dispersion of the minute flakes of aluminum forming a smooth, scale-like coating, greater hiding power and opacity, greater light reflection, reduced loss by evaporation, greater resistance to fumes, acids and metals, heat, etc., longer life and 20 per cent greater coverage, are some of the principal advantages of this exceptionally fine aluminum paint.

Recommended for exterior and interior use on wood, metal, brick, plaster and concrete. Tanks, pipes, towers, bridges.

HORN HEAT RESISTING ALUMINUM PAINT

Specially formulated to provide maximum protection for metal surfaces subject to heat.

Designed for application on interior and exterior surfaces. Recommended for smoke stacks, furnace fronts, steam pipes, boilers, gas and oil burners, and for other surfaces where temperature does not exceed 600 deg. Fahr. May be brush or spray applied. An excellent procedure in painting stacks is to paint the top section with HORN HEAT RESISTING BLACK to avoid discoloration from smoke and chemical fumes.

HORN INDUSTRIAL ENAMEL

A durable, high-gloss enamel coating designed for interior and exterior use. Excellent adhesion to wood, metal and masonry surfaces. Colors comply with engineering standards for pipe-line identification systems.

Used for machinery, safety controls, pipe systems, handrails, gasoline and oil pumps, fire boxes and hydrants, meters, semaphores, safety standards, laundry, dairy, bakery and other industrial equipment. NOT to be used as an original decorative finish on manufactured products.

RUSTBAAR

A rust-resisting primer, Red-Lead color, containing lead chromate and special oils to produce a coating having high rust-inhibiting qualities.

Used as a substitute for Red Lead. For interior or exterior application as a primer on metal surfaces. Should be followed by a finish coat of HORN REXIDE, HORN GRAPHITE PAINT, HORN INDUSTRIAL ENAMEL, HORNSPAR ENAMEL, HORN ALUMINUM PAINT, etc. For the protection of bridges, building skeletons, gas holders, oil tanks, farming implements, machinery, tin roofs, pipes, water tanks, etc., wherever metal needs protection. Also manufacturers of ornamental iron works, fences, structural iron.

MISCELLANEOUS SPECIALTIES

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Horn "88" Cleaner	63
Horn Formfilm and Formfilm Thinner.....	63
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Hornseal	63

FORMFILM

Description:

A quick-drying, protective, amber-color liquid coating which offers three distinct advantages:

1. It makes practical the use of plywood for concrete forms; the forms may be used over and over again, for the coating prevents the absorption of water from the concrete and resists the alkaline reaction of the cement, and this prevents the raising of the grain of the wood.
2. It prevents the transfer of wood grain markings and oil to the face of the concrete.
3. It leaves a smooth surface on the concrete, which may be painted without a plaster coat or costly rubbing. . . . FORMFILM flows out to a smooth, even, glass-like finish.

Use:

FORMFILM is applied to the virgin plywood. The wood must be free from form oil and other foreign matter. May be applied by brushing or dipping. Must be thinned with FORMFILM thinner. Average thinning required is one gallon of thinner to ten gallons of FORMFILM, depending upon job temperature. Traffic abrasion and the placing of reinforcing bars may mar the film, in which case it may be advisable to touch up the film by brushing while the form is in place.

Covering Capacity:

Dipping: 200 sq. ft. per gallon contact surface.

Brushing: 200 sq. ft. per gallon.

Packaging:

Drums (55-60 gals.)

5-gal. pails

Half drums (30-40 gals.)

1-gal. cans (packed 4 to a case)

HORN "88" CLEANER

A liquid preparation—designed for the cleaning of exterior and interior masonry surfaces. Loosens soil deposits and surface stains by actually "slicing" these deposits from the surface and restoring the original masonry color.

Exterior Surfaces: Limestone, terra-cotta, brick, concrete, ornamental stone and all other *unglazed* masonry surfaces.

Interior Surfaces: Terrazzo floors, mosaic tile floors and walls, floor tile, travertine, slate and other *unglazed* masonry, floor and wall surfaces.

Not recommended for use on polished marble, polished granite, or glazed surfaces.

HORN KILN LINING

A material of plastic consistency applied with a trowel. Dries to a tough, elastic surface film, but remains in a plastic state underneath. Prevents absorption of moisture, thereby aiding in the control of humidity and drying conditions.

Applied to the interior brick wall and ceiling surfaces of kilns. Provides insulation and protection for these surfaces against absorption of moisture. Applied by trowel.

HORN TREE PAINT

An antiseptic dressing for tree wounds. It stimulates the production of callus (sponge cells), permitting self-healing of the wound. In addition, HORN TREE PAINT serves as a protection against infection and wood-rotting fungi. Recommended for dressing all tree wounds over 1 inch in diameter.

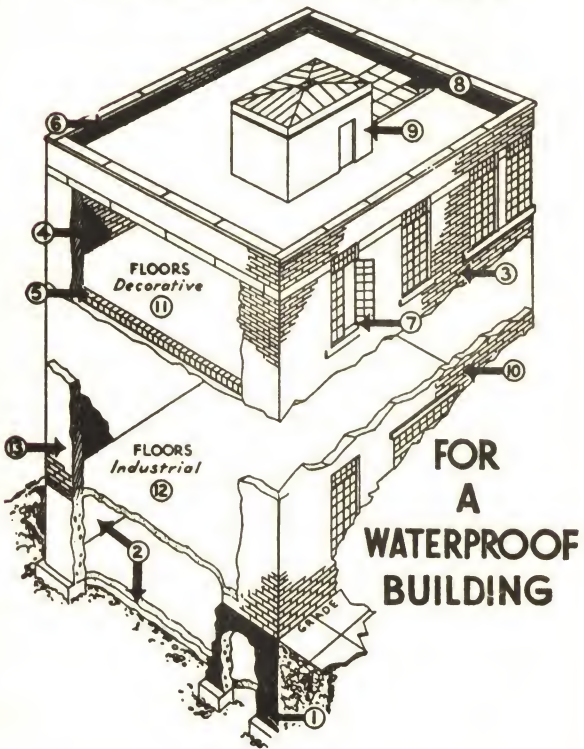
HORNSEAL

A plastic coating of trowel consistency. For application to the outer surfaces of brick boiler settings to prevent leakage of air through the boiler walls.

A HORN PRODUCT FOR EVERY CONDITION
AND METHOD



CHECK CHART



FOR
A
WATERPROOF
BUILDING

**Specifications, Detailed Data and Color Cards
on the Complete Horn Line Furnished on Request.**

DETAIL No. 1

WATERPROOFING — DAMPPROOFING FLOOR TREATMENTS

*To Set a Proper Standard in Your Specifications
Specify "HORN or Equal"*

1—FOUNDATION WATERPROOFING (Against Surface Drainage)

Coat exterior of foundation walls below grade with Dehydratine 4 foundation coating. For all concrete below grade specify Hydratite, 2 lbs. per bag of cement. Fill joint between floor and wall with Horn Expansion Joint Cement.

2—FOUNDATION WATERPROOFING (Against Hydrostatic Head)

Specify Metalon metallic water-repellent on top of rough floor slab and inside of walls to grade level. Specify Hydratite, 2 lbs. per bag of cement for all concrete below grade. Specify "Horn detail joint" between floor and wall.

3—BRICK MORTAR

Specify 1 part cement, 1 part lime, 6 parts sand with 2 lbs. Hydratite Plus for each bag of cement, for "preshrunk" mortar joints, protection against rainwater infiltration through joints, and minimum efflorescence.

4—DAMPPROOFING INTERIOR OF EXTERIOR WALLS ABOVE GRADE.

A—BRICK—For walls well pointed up where no openings are to be bridged, use Dehydratine 1. For better protection, use Dehydratine 10 Semi-Mastic. For finest jobs specify Dehydratine 10 Mastic.

B—CONCRETE WALLS—Do not attempt to bond lime or gypsum plaster to concrete. Either fur the wall after applying Dehydratine 1 or roughen the surface and apply Portland cement plaster with Hydratite.

5—SPANDREL BEAMS.

Specify Horn Spandrel Beam Method using Triple-Flex Fabric.

6—PARAPETS

A—PARAPET JOINTS—Prime with Vulcatex Joint Primer and fill with Vulcatex Caulking Compound applied by "Vulcatex Thriftpak Pressure Method."

B—PARAPET BACKS—Prime with Dehydratine 1 Trowel on 1/16 in. thickness of Dehydratine 10 Mastic from coping line to flashing of roof line.

7—WINDOW CAULKING

Avoid narrow joints. Specify minimum width 1/2 inch. Pack with oakum to within 1/2 inch of surface. Prime joints with Vulcatex Joint Primer. Caulk with Vulcatex using Vulcatex Thriftpak Pressure Method. Specify same for door openings.

8—TILED ROOF DECKS (Joints)

Specify Horn Expansion Joint Cement for filling one-inch joints between roof deck and parapet. Install joints at 10-ft. intervals throughout roof area.

9—PENTHOUSE OR STUCCO WALLS

Specify two coats of Symmentrex or Water Foll, of color to be selected. All cracks or openings must be filled or pointed first.

10—POROUS MASONRY

A—To seal porosity and slightly deepen the color, thereby developing texture, apply two coats Dehydratine 2.

B—To seal the porosity and not change color, use two coats Dehydratine 2A transparent coating.

11—CEMENT FLOORS (DECORATIVE)

A—Specify Colorundum "in accordance with manufacturer's directions" for cement floors that are equivalent to tile in beauty and durability. Standard colors—red, green, brown, black, French grey (all priced the same).

B—For floors already installed use Koncrex.

12—FLOORS (INDUSTRIAL)

A—Heavy duty concrete: Specify 40 lbs. per 100 sq. ft. Ferro-Fax metallic hardener.

B—Average factory floor: Specify 30 lbs. per 100 sq. ft. Ferro-Fax metallic hardener (in colors also).

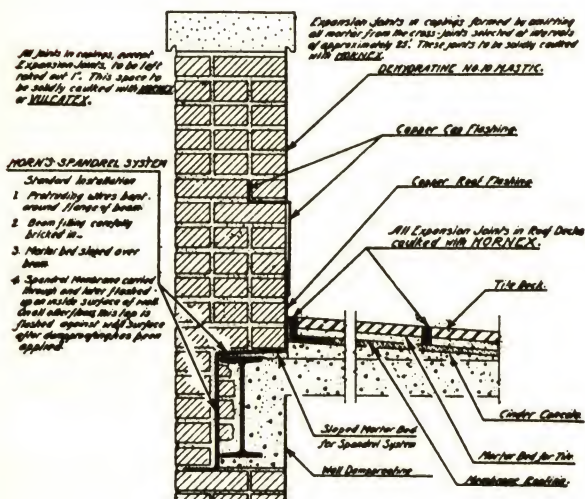
13—LEAKY BUILDINGS

Horn maintains a nation-wide service of waterproofing engineers to render expert reports and recommendations on remedial waterproofing of all types of existing structures.

These Products Are Time-Tested, Meet Rigid Specifications, and are Unexcelled for Quality, Efficiency and Economy.

CONSTRUCTION DETAIL No. 2

WATERPROOFING DETAILS PARAPETS AND SPANDRELS



- VULCATEX
- SPANDRELS
- DEHYDRATINE 10

CONSTRUCTION DETAIL No. 3

WATERPROOFING BASEMENTS

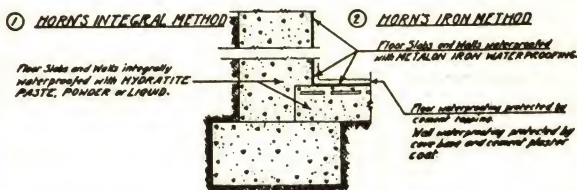
A—PRESSURE CONDITIONS: Where hydrostatic conditions are present, it is primarily essential that the walls and floor slabs in contact with earth shall be structurally designed to effectively resist the pressure loads; otherwise the concrete will be ruptured and leakage through the resulting cracks will occur regardless of the waterproofing systems employed.

In this connection, particular attention is directed to the design of the basement floor slab. When the water level outside the foundation is above that of the basement floor, an upward-acting (hydrostatic) pressure is exerted against the slab. This pressure depends upon the depth (hydrostatic head) of water above the bottom of the slab and is equal to the head (depth of water in feet) x 62.5 lbs. (weight of a cubic foot of water) x the area of the floor (between walls) in square feet.

EXAMPLE: For a slab 20' x 10', with 5' head, the total pressure would be 5 x 62.5 x 200, or 62,500 lbs. Therefore, where hydrostatic conditions are present, the importance of adequate design to resist the pressure cannot be overestimated.

Standard methods for waterproofing basements to prevent leakage or dampness under hydrostatic pressure conditions are illustrated by Figure (A) below. The HORN INTEGRAL METHOD (1) used in new construction is most economical, but its effectiveness depends upon the thickness of the wall and the quality of the concrete. The HORN IRON METHOD (2) is used either in new construction or in the remedial waterproofing of leaking basements.

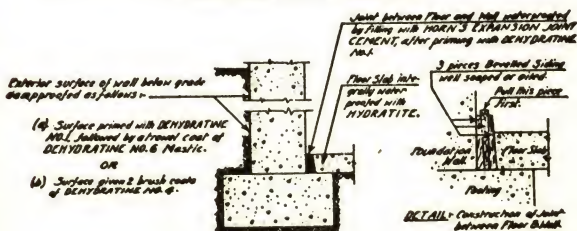
(A) WATERPROOFING BASEMENTS SUBJECT TO HYDROSTATIC PRESSURE



B—NON-PRESSURE CONDITIONS: Figure (B) below illustrates the Horn Method for dampproofing basements where the substructure will not be subjected to hydrostatic pressure as the result of ground water and surface drainage conditions. Leaking basements in existing construction of this type are waterproofed by the HORN IRON METHOD.

C—VAULT CEILINGS: Vault ceilings and other decks where normal water conditions exist should be waterproofed by the HORN MEMBRANE METHOD, which consists of: (1) priming coat of DEHYDRATINE 4; (2) trowel coat of DEHYDRATINE 6; (3) 1 ply of TRIPLEFLEX SATURATED WATERPROOFING FABRIC; (4) Second trowel coat of DEHYDRATINE 6; (5) Second ply of TRIPLEFLEX FABRIC; (6) Third and final trowel coat of DEHYDRATINE 6.

(B) DAMPPROOFING BASEMENTS NOT SUBJECT TO HYDROSTATIC PRESSURE



THE DESIGN OF BASEMENT FLOOR SLABS

The design of basement floor slabs to resist hydrostatic pressure must be considered in relation to the other problems involved in the general design and construction. Where pressure conditions are present, the floor must be designed to function as an inverted slab capable of effectively resisting the maximum upward-acting hydrostatic load to which it will be subjected. In addition, the slab must be keyed to the wall to prevent lifting.

For the information of the Architect, we submit the fol-

SLAB THICKNESS AND REINFORCEMENT

Head.		S								
		6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"
1'-0"	Slab	4"	4"	4"	4"	4"	4"	4"	4"	4"
	Steel	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$	$\frac{3}{8}\phi 12c$
2'-0"	Slab	4"	4"	4"	4"	4"	4"	4"	4"	5"
	Steel	$\frac{3}{8}\phi 11c$	$\frac{3}{8}\phi 8c$	$\frac{3}{8}\phi 6c$	$\frac{3}{8}\phi 5c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4c$	$\frac{3}{8}\phi 4c$	$\frac{3}{8}\phi 4c$	$\frac{1}{2}\phi 6\frac{1}{2}c$
3'-0"	Slab	4"	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	5"	5 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	6"	6 $\frac{1}{4}$ "
	Steel	$\frac{3}{8}\phi 5c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4c$	$\frac{1}{2}\phi 6\frac{1}{2}c$	$\frac{1}{2}\phi 6c$	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 5c$
4'-0"	Slab	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	5"	5 $\frac{1}{2}$ "	6"	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	7"	7 $\frac{1}{2}$ "
	Steel	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 6\frac{1}{2}c$	$\frac{1}{2}\phi 6c$	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 5c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$
5'-0"	Slab	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	6"	6 $\frac{1}{2}$ "	7"	7 $\frac{1}{2}$ "	8"	8 $\frac{1}{4}$ "
	Steel	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4c$	$\frac{1}{2}\phi 6c$	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 4c$	$\frac{1}{2}\phi 3\frac{1}{2}c$	$\frac{3}{8}\phi 3\frac{1}{2}c$
6'-0"	Slab	4 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	6"	6 $\frac{1}{2}$ "	7"	7 $\frac{1}{2}$ "	8"	8 $\frac{1}{4}$ "	9"
	Steel	$\frac{1}{2}\phi 7c$	$\frac{1}{2}\phi 6c$	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 4c$	$\frac{3}{8}\phi 3\frac{1}{2}c$	$\frac{3}{8}\phi 3\frac{1}{2}c$	$\frac{3}{8}\phi 3c$
7'-0"	Slab	5 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	7"	7 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	9"	9 $\frac{1}{2}$ "	10"
	Steel	$\frac{1}{2}\phi 6\frac{1}{2}c$	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4c$	$\frac{3}{8}\phi 3\frac{1}{2}c$	$\frac{3}{8}\phi 3\frac{1}{2}c$	$\frac{3}{8}\phi 3c$	$\frac{3}{8}\phi 3c$
8'-0"	Slab	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	7"	7 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	9"	9 $\frac{1}{2}$ "	10"	10 $\frac{1}{2}$ "
	Steel	$\frac{1}{2}\phi 6c$	$\frac{1}{2}\phi 5c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4c$	$\frac{3}{8}\phi 3\frac{1}{2}c$	$\frac{3}{8}\phi 3\frac{1}{2}c$	$\frac{3}{8}\phi 3c$	$\frac{3}{8}\phi 3c$	$\frac{3}{8}\phi 3c$
9'-0"	Slab	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	8"	9"	9 $\frac{1}{2}$ "	10"	11"	11 $\frac{1}{2}$ "
	Steel	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 6c$	$\frac{3}{8}\phi 5\frac{1}{2}c$	$\frac{3}{8}\phi 5c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4c$
10'-0"	Slab	6"	7"	7 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	9"	10"	10 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	12"
	Steel	$\frac{1}{2}\phi 5\frac{1}{2}c$	$\frac{1}{2}\phi 4\frac{1}{2}c$	$\frac{1}{2}\phi 4c$	$\frac{3}{8}\phi 5\frac{1}{2}c$	$\frac{3}{8}\phi 5c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4\frac{1}{2}c$	$\frac{3}{8}\phi 4c$	$\frac{3}{8}\phi 3\frac{1}{2}c$

ϕ Indicates "Round Deformed Rods"
c Indicates "On Centers".

Greater head of water or larger span requires Special Design.

Use of Table:-

Problem:- Head of water 8'-0", Distance between walls 15'-0".

Opposite the 8'-0" Head and the 15'-0" Span col we find an 11" slab reinforced with $\frac{3}{8}\phi$ on 4" c which should run from wall to wall, keyed as shown. This slab should have $\frac{1}{2}\phi @ 12c$ Distribution Rods.

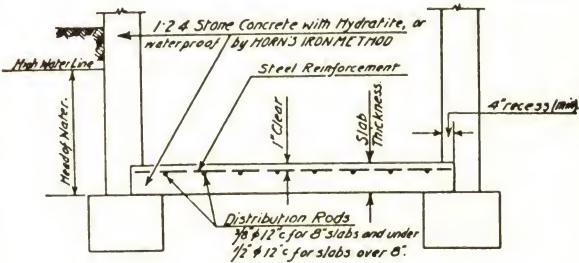
DETAIL No. 4

TO RESIST HYDROSTATIC PRESSURE

lowing table showing slab thickness and reinforcement required for various heads and spans. In this connection it is noted that the solution of all such problems should be based upon accurate knowledge of the field conditions, and that the necessity for special engineering designed to meet the requirements of a particular case should be anticipated. The compilations and designs have been gathered from competent sources and are submitted as suggestions without liability of any nature whatsoever, and as a service to our many friends.

REQUIRED FOR VARIOUS HEADS AND SPANS

P A N										
15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"	25'-0"
4"	4"	4"	4"	4"	4"	4"	4"	4 1/4"	4 1/4"	4 1/4"
3/8 #10c	3/8 #9c	3/8 #8c	3/8 #7c	3/8 #6c	3/8 #6c	3/8 #5 1/2c	3/8 #5c	3/8 #6c	3/8 #6c	3/8 #5 1/2c
5 1/4"	5 1/4"	5 3/4"	5 3/4"	6"	6 1/4"	6 1/4"	6 1/2"	6 1/2"	7"	7"
1/2 #6 1/2c	1/2 #6c	1/2 #5 1/2c	1/2 #5 1/2c	1/2 #5 1/2c	1/2 #5 1/2c	1/2 #5c	1/2 #5c	1/2 #4 1/2c	1/2 #4 1/2c	1/2 #4 1/2c
6 1/2"	7"	7 1/2"	7 1/2"	8"	8"	8"	8 1/2"	8 1/2"	9"	9"
1/2 #4 1/2c	1/2 #4 1/2c	1/2 #4 1/2c	1/2 #4c	1/2 #4c	3/8 #6c	3/8 #6c	3/8 #5 1/2c	3/8 #5 1/2c	3/8 #5 1/2c	3/8 #5 1/2c
8"	8"	8 1/2"	9"	9"	9 1/2"	9 1/2"	10"	10 1/2"	10 1/2"	10 1/2"
3/8 #6c	3/8 #6c	3/8 #5 1/2c	3/8 #5 1/2c	3/8 #5 1/2c	3/8 #5c	3/8 #4 1/2c	3/8 #5c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c
9"	9"	9 1/2"	10"	10"	10 1/2"	11"	11"	11 1/2"	12"	12"
3/8 #5 1/2c	3/8 #5c	3/8 #5c	3/8 #5c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4c	3/8 #5 1/2c	3/8 #5 1/2c	3/8 #5 1/2c
9 1/2"	10"	10 1/2"	11"	11 1/2"	12"	12"	12 1/2"	13"	13 1/2"	14"
3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4c	3/8 #5 1/2c	3/8 #5 1/2c	3/8 #5c	3/8 #5c	3/8 #4 1/2c	3/8 #4 1/2c
10 1/2"	11"	11 1/2"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	14 1/2"	15"
3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4c	3/8 #5 1/2c	3/8 #5c	3/8 #5c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c
11"	12"	12 1/2"	13"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16"	16 1/2"
3/8 #4c	3/8 #5c	3/8 #5 1/2c	3/8 #5c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4c	3/8 #4c
12"	12 1/2"	13"	13 1/2"	14 1/2"	15"	15 1/2"	16"	16 1/2"	17"	17 1/2"
3/8 #5 1/2c	3/8 #5c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4c	3/8 #4c	3/8 #5 1/2c	3/8 #5c	3/8 #4 1/2c
12 1/2"	13 1/2"	14"	14 1/2"	15"	15 1/2"	16 1/2"	17"	17 1/2"	17 1/2"	18 1/2"
3/8 #5 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4c	3/8 #5 1/2c	3/8 #5c	3/8 #4 1/2c	3/8 #4 1/2c	3/8 #4 1/2c

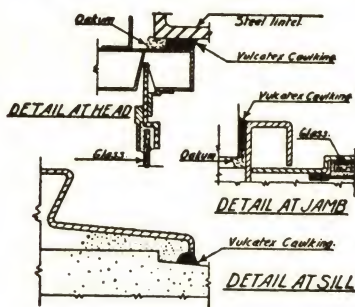


CONSTRUCTION DETAIL No. 5

WINDOW CAULKING DETAILS

Space between frames and masonry caulked for entire perimeter of all openings.

METAL WINDOW FRAMES



WOOD WINDOW FRAMES

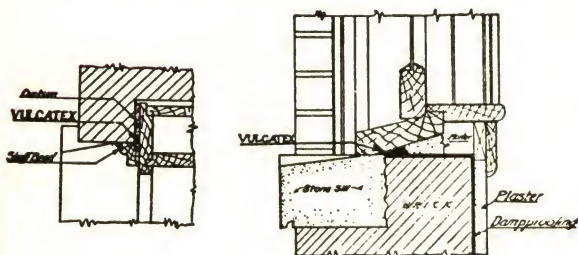


Figure 1
Detail at Jamb
Similar Caulking at Head

Figure 2
Detail of Sill

FOR VARIOUS TYPES OF WINDOWS, DATA OF WINDOW MANUFACTURERS SHOULD BE CONSULTED

Specify VULCATEX
Elastic Caulking Compound

Materials for 100 Sq. Ft. of Waterproofed Walls, Floors, Sidewalks, or any Slabs

Concrete Base

Slab Thickness	1:1 3/4:2 3/4			1:2:3			1:2:3 1/2			1:2 1/2:4			1:3:5		
	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.
2 1/2 in.	5.7	0.36	0.62	5.2	0.40	0.59	4.8	0.37	0.64	4.2	0.40	0.63	3.4	0.39	0.65
3	6.8	0.43	0.74	6.3	0.48	0.71	5.8	0.44	0.76	5.0	0.48	0.75	4.1	0.47	0.78
3 1/2	8.0	0.51	0.86	7.3	0.56	0.83	6.8	0.52	0.90	5.8	0.56	0.88	4.8	0.55	0.92
4	9.1	0.58	0.99	8.4	0.64	0.95	7.7	0.59	1.02	6.6	0.64	1.01	5.5	0.63	1.05
4 1/2	10.3	0.65	1.11	9.4	0.72	1.06	8.7	0.66	1.15	7.5	0.72	1.13	6.1	0.70	1.17
5	11.4	0.73	1.23	10.5	0.80	1.19	9.7	0.74	1.28	8.3	0.80	1.26	6.8	0.79	1.31
5 1/2	12.6	0.80	1.36	11.6	0.88	1.31	10.7	0.82	1.41	9.2	0.88	1.39	7.5	0.87	1.45
6	13.7	0.87	1.48	12.6	0.96	1.42	11.6	0.89	1.54	10.0	0.96	1.52	8.2	0.94	1.57

Wearing or Finish Course

Thickness	1:1 1/2			1:2			1:1:1			1:1:1 1/2			1:1:2		
	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.	Cement Sacks	Sand Cu. Yd.	Stone Cu. Yd.
1 1/2 in.	2.4	0.13	0.15	2.0	0.15	0.08	2.1	0.08	0.08	1.8	0.07	0.10	1.6	0.06	0.12
3/4	3.6	0.19	0.22	2.9	0.22	0.11	3.1	0.11	0.11	2.7	0.10	0.15	2.4	0.09	0.18
1	4.8	0.26	0.29	3.9	0.29	0.15	4.2	0.15	0.15	3.7	0.14	0.20	3.2	0.12	0.24
1 1/4	6.0	0.33	0.36	4.9	0.36	0.19	5.2	0.19	0.19	4.6	0.17	0.25	4.1	0.15	0.30
1 1/2	7.2	0.40	0.43	5.9	0.43	0.23	6.3	0.23	0.23	5.5	0.20	0.30	4.9	0.18	0.36
1 3/4	8.4	0.46	0.50	6.9	0.50	0.27	7.3	0.27	0.27	6.4	0.24	0.36	5.7	0.21	0.42
2	9.6	0.53	0.58	7.9	0.58	0.31	8.3	0.31	0.31	7.3	0.27	0.41	6.5	0.25	0.50

Add Hydratite, 2 pounds per bag of cement for water repellancy.

Materials Required for 1 Cubic Yard of Mortar and Concrete

Mixture	3/4" Gravel				1" Stone Dust Out				2 1/2" Stone Dust Out				2 1/2" Stone Most Small Stone Out			
	Barrels Cement	Cubic Yard Sand	Cubic Yard Stone	Barrels Cement	Cubic Yard Sand	Cubic Yard Stone	Barrels Cement	Cubic Yard Sand	Barrels Cement	Cubic Yard Sand	Cubic Yard Stone	Barrels Cement	Cubic Yard Sand	Cubic Yard Stone	Barrels Cement	Cubic Yard Stone
Mortar																
1:1 1/2	3.61	0.80	Using	very	fine	sand	3.87	0.86				Using	coarse			
1:2	3.02	0.90	"	"	"	"	3.21	0.95				"	"			
1:2 1/2	2.60	0.96	"	"	"	"	2.74	1.01				"	"			
1:3	2.28	1.01	"	"	"	"	2.39	1.06				"	"			
Concrete																
1:1:2	2.30	0.35	0.74	2.57	0.39	0.78	2.63	0.40			0.80	2.72	0.41			0.83
1:1 1/2:3	1.71	0.39	0.78	1.85	0.42	0.84	1.90	0.43			0.87	1.96	0.45			0.89
1:1 3/4:2 3/4	1.75	0.43	0.75	1.85	0.47	0.80	1.93	0.46			0.84	2.00	0.48			0.85
1:2:3	1.54	0.47	0.73	1.70	0.52	0.77	1.73	0.53			0.79	1.78	0.54			0.81
1:2:3 1/2	1.44	0.44	0.77	1.57	0.48	0.83	1.61	0.49			0.85	1.66	0.50			0.88
1:2:4	1.34	0.41	0.81	1.46	0.44	0.89	1.48	0.45			0.90	1.53	0.47			0.93
1:2 1/2:4	1.24	0.47	0.75	1.35	0.52	0.82	1.38	0.53			0.84	1.42	0.54			0.87
1:2 1/2:4 1/2	1.16	0.44	0.80	1.27	0.48	0.87	1.29	0.49			0.88	1.33	0.51			0.91
1:2 1/2:5	1.10	0.42	0.83	1.19	0.46	0.91	1.21	0.46			0.92	1.26	0.48			0.96
1:3:4	1.15	0.52	0.72	1.26	0.58	0.77	1.28	0.58			0.78	1.32	0.60			0.80
1:3:5	1.03	0.47	0.78	1.11	0.51	0.85	1.14	0.52			0.87	1.17	0.54			0.89
1:3:6	0.92	0.42	0.84	1.01	0.46	0.92	1.02	0.47			0.93	1.06	0.48			0.97

Add 2 pounds Hydratite per bag of cement for water repellancy.

Handy Table for Figuring Quantities of Brick

Sq. Ft. of Wall	RUNNING				COMMON Header Course Every 7th Course				ENGLISH AND ENGLISH CROSS* Full Headers Every 6th Course				FLEMISH Full Headers Every 5th Course				DOUBLE HEADERS Alternating with Stretchers Every 5th Course				Sq. Ft. of Wall
	Backing Brick in		Face Brick	Backing Brick in		Face Brick	Backing Brick in		Face Brick	Backing Brick in		Face Brick	Backing Brick in		Face Brick	Backing Brick in		Face Brick	Backing Brick in		
	8" Wall	12" Wall		8" Wall	12" Wall		8" Wall	12" Wall		8" Wall	12" Wall		8" Wall	12" Wall		8" Wall	12" Wall		8" Wall	12" Wall	
1	6.16	6.16	6.16	12.32	7.04	7.04	5.28	11.44	7.19	5.13	11.29	6.57	5.75	11.91	6.78	5.54	11.70	6.78	5.54	11.70	1
5	31	62	31	62	36	71	27	58	36	72	57	33	29	60	34	28	59	34	28	59	5
10	62	124	62	124	71	141	53	115	72	144	113	66	58	120	68	56	117	68	56	117	10
20	124	248	124	248	141	281	106	230	144	288	226	132	115	239	136	111	234	136	111	234	20
30	185	370	185	370	212	422	159	344	216	432	339	198	173	358	204	167	351	204	167	351	30
40	247	494	247	494	282	564	212	458	288	576	452	263	230	477	272	222	468	272	222	468	40
50	308	616	308	616	352	704	264	572	360	720	565	329	288	596	339	277	585	339	277	585	50
60	370	740	370	740	423	846	317	687	432	864	675	395	345	715	407	333	702	407	333	702	60
70	432	864	432	864	493	986	370	801	504	1008	791	460	403	834	475	388	819	475	388	819	70
80	493	986	493	986	564	1128	423	916	576	1152	904	526	460	953	543	444	936	543	444	936	80
90	555	1110	555	1110	634	1266	476	1030	648	1296	1017	582	518	1072	611	499	1053	611	499	1053	90
100	616	1232	616	1232	704	1408	528	1144	719	1438	1129	637	575	1191	678	554	1170	678	554	1170	100
200	1232	2464	1232	2464	1408	2816	1056	2308	1438	2876	2258	1314	1150	2382	1356	1108	2340	1356	1108	2340	200
300	1848	3696	1848	3696	2110	4220	1584	3432	2157	4316	3387	1971	1725	3573	2034	1662	3510	2034	1662	3510	300
400	2464	4928	2464	4928	2816	5632	2112	4576	2876	5752	4516	2628	2300	4764	2712	2216	4680	2712	2216	4680	400
500	3080	6160	3080	6160	3520	7040	2640	5760	3595	7190	5645	3285	2875	5955	3390	2770	5850	3390	2770	5850	500
600	3696	7392	3696	7392	4224	8448	3168	6864	4314	8624	6774	3942	3450	7146	4068	3324	7020	4068	3324	7020	600
700	4312	8624	4312	8624	4928	9856	3696	8010	5033	10066	7903	4599	4025	8337	4746	3878	8190	4746	3878	8190	700
800	4928	9856	4928	9856	5632	11264	4224	9152	5752	11504	9032	5256	4600	9528	5494	4432	9360	5494	4432	9360	800
900	5544	11088	5544	11088	6336	12672	4752	10296	6471	12960	10161	5913	5175	10719	6102	4986	10530	6102	4986	10530	900
1000	6160	12320	6160	12320	7040	14080	5280	11440	7190	14380	11290	6570	5750	11910	6780	5540	11700	6780	5540	11700	1000
2000	12320	24640	12320	24640	14080	28160	10560	23080	14380	28760	22580	13140	11500	23820	13560	11080	23400	13560	11080	23400	2000

* The quantities in this column also apply to common brick with headers in every sixth course.

For other than 1/2" joints, the following percentages must be added to or subtracted from above results:

Add: for 3/8" joint, 21%, for 1/4" joint, 14%, for 3/16" joint, 7%.

Subtract: for 5/8" joint, 5%, for 3/4" joint, 10%, for 1" joint, 15%, for 1 1/2" joint, 20%.

The table illustrated here will not only save you considerable time in estimating the number of brick needed for facing as well as backing on 8-in. or 12-in. wall but will enable you to determine the number of bricks required to lay up any given number of sq. ft. of wall area.

Mortar and Stucco

Area Covered by One Barrel (4 bags) of Cement in Various Mixes

Mix Parts by Volume		Thickness of Coat				
Cement	Sand	1/4 Inch—Sq. Ft. *	3/8 Inch—Sq. Ft.	1/2 Inch—Sq. Ft.	3/4 Inch—Sq. Ft.	1 Inch—Sq. Ft.
1	1	266	177	133	89	66
1	1 1/2	336	226	168	112	84
1	2	404	270	202	135	101
1	2 1/2	472	314	236	157	118
*1	3	542	362	271	181	136
1	3 1/2	612	408	306	204	153
1	4	682	455	341	227	171

* 1:3 is the mix most used for stucco work.

Plaster Coverage on Various Plastering Bases

Approximate yard coverage per ton on various plastering bases

Type of plaster	Gypsum lath	Gypsum insulating lath	Painted metal lath	Wood lath	Gypsum tile	Brick and clay tile
Neat	225-240 Sanded 1-2	225-240 Sanded 1-2	105-135 Sanded 1-2	180-210 Sanded 1-3	235-255 Sanded 1-3	165-200 Sanded 1-3
Sanded	75-80	75-80	35-45	60-70	65-70	45-55
Wood Fibred	115-120 Water only no sand	115-120 Water only no sand	56-65 Water only no sand	90-100 Water only no sand

Handy Tables for Estimating Paint Needs for Interiors and Exteriors of Houses

You can figure the number of gallons of paint required to cover the exterior and interior of a house of any size quickly and accurately with the aid of the accompanying two tables.

DISTANCE AROUND THE ROOM	CEILING HEIGHT 8 FEET	CEILING HEIGHT 8 1/2 FEET	CEILING HEIGHT 9 FEET	CEILING HEIGHT 9 1/2 FEET	CEILING HEIGHT 10 FEET	PAINT FOR CEILING	FINISH FOR FLOORS	FOR EACH DOOR OR WINDOW
30 FEET	5/8 Gal.	5/8 Gal.	3/4 Gal.	3/4 Gal.	3/4 Gal.	1 Pt.	1 Pt.	EACH WINDOW AND FRAME REQUIRES 1/4 PINT
35 FEET	3/4 Gal.	3/4 Gal.	3/4 Gal.	7/8 Gal.	1 Gal.	1 Qt.	1 Pt.	EACH DOOR AND FRAME REQUIRES 1/2 PINT
40 FEET	7/8 Gal.	7/8 Gal.	1 Gal.	1 Gal.	1 Gal.	1 Qt.	1 Qt.	
45 FEET	1 Gal.	1 Gal.	1 1/8 Gals.	1 1/8 Gals.	1 1/8 Gals.	3 Pts.	1 Qt.	
50 FEET	1 1/8 Gals.	1 1/8 Gals.	1 1/4 Gals.	1 1/4 Gals.	1 1/4 Gals.	3 Pts.	1 Qt.	
55 FEET	1 1/4 Gals.	1 1/4 Gals.	1 1/2 Gals.	1 1/2 Gals.	1 1/2 Gals.	2 Qts.	3 Pts.	
60 FEET	1 1/2 Gals.	1 1/2 Gals.	1 3/4 Gals.	1 3/4 Gals.	1 3/4 Gals.	2 Qts.	3 Pts.	
70 FEET	1 3/4 Gals.	1 3/4 Gals.	1 5/8 Gals.	1 5/8 Gals.	1 5/8 Gals.	3 Qts.	2 Qts.	
80 FEET	1 5/8 Gals.	1 5/8 Gals.	1 3/4 Gals.	1 3/4 Gals.	1 3/4 Gals.	1 Gal.	5 Pts.	
For rough, sand finished walls or unpainted wallboard, add 50% to above quantities; for each door or window deduct 1/2 pint of materials for walls.								
DISTANCE AROUND THE HOUSE	AVERAGE HEIGHT 12 FEET	AVERAGE HEIGHT 15 FEET	AVERAGE HEIGHT 18 FEET	AVERAGE HEIGHT 21 FEET	AVERAGE HEIGHT 24 FEET	AVERAGE HEIGHT 30 FEET		
60 FEET	1 Gal.	1 1/4 Gals.	1 1/2 Gals.	1 3/4 Gals.	2 Gals.	2 1/2 Gals.		
76 FEET	1 1/4 Gals.	1 1/2 Gals.	2 Gals.	2 1/4 Gals.	2 1/2 Gals.	3 1/4 Gals.		
92 FEET	1 1/2 Gals.	2 Gals.	2 1/2 Gals.	2 3/4 Gals.	3 Gals.	4 Gals.		
108 FEET	1 3/4 Gals.	2 1/4 Gals.	2 3/4 Gals.	3 1/4 Gals.	3 3/4 Gals.	4 1/2 Gals.		
124 FEET	2 Gals.	2 1/2 Gals.	3 Gals.	3 1/2 Gals.	4 Gals.	5 1/4 Gals.		
140 FEET	2 1/2 Gals.	3 Gals.	3 1/2 Gals.	4 Gals.	4 1/2 Gals.	5 3/4 Gals.		
156 FEET	2 3/4 Gals.	3 1/4 Gals.	4 Gals.	4 1/2 Gals.	5 1/4 Gals.	6 1/2 Gals.		
172 FEET	3 Gals.	3 3/4 Gals.	4 1/2 Gals.	5 Gals.	5 3/4 Gals.	7 1/4 Gals.		

For trim, add 1/8 to 1/5 of the amount required for the body. One-half gallon will cover 12 to 14 pairs of blinds, one coat.

To Determine Number of Bricks Required

Number of Common Brick (2 1/4" x 3 3/4" x 8") Required for Walls of Different Thicknesses.

Surface Area of Wall (Square Feet)	Number of Bricks Needed for Thickness of					
	4 Inches	8 Inches	12 Inches	16 Inches	20 Inches	24 Inches
1	7	15	23	30	38	45
2	15	30	45	60	75	90
3	23	45	68	90	113	135
4	30	60	90	120	150	180
5	38	75	113	150	188	225
6	45	90	135	180	225	270
7	53	105	158	210	263	315
8	60	120	180	240	300	360
9	68	135	203	270	338	405
10	75	150	225	300	375	450
20	150	300	450	600	750	900
30	225	450	675	900	1,125	1,350
40	300	600	900	1,200	1,500	1,800
50	375	750	1,125	1,500	1,875	2,250
60	450	900	1,350	1,800	2,250	2,700
70	525	1,050	1,575	2,100	2,625	3,150
80	600	1,200	1,800	2,400	3,000	3,600
90	675	1,350	2,025	2,700	3,375	4,050
100	750	1,500	2,250	3,000	3,750	4,500
200	1,500	3,000	4,500	6,000	7,500	9,000
300	2,250	4,500	6,750	9,000	11,250	13,500
400	3,000	6,000	9,000	12,000	15,000	18,000
500	3,750	7,500	11,250	15,000	18,750	22,500
600	4,500	9,000	13,500	18,000	22,500	27,000
700	5,250	10,500	15,750	21,000	26,250	31,500
800	6,000	12,000	18,000	24,000	30,000	36,000
900	6,750	13,500	20,250	27,000	33,750	40,500
1,000	7,500	15,000	22,500	30,000	37,500	45,000

Amount of Mixing Water for Concrete

Proportions			Mixing Water Required Per Bag		Mixing Water Required Per Cubic Yard	
Cement	Sand	Stone	Minimum (gallons)	Maximum (gallons)	Minimum (gallons)	Maximum (gallons)
1	1½	3	5½	6	42	46
1	2	3	5¾	6¼	40	43½
1	2	4	6	6½	36	39
1	2½	5	7¼	7¾	36	38½
1	3	6	8¼	8¾	35	37

Materials for 100 Sq. Ft. of Wall of Cement Plaster or Stucco

No Allowance for Waste

Thick-ness	Cu. Ft. Mor-tar	1:2 Mix		1:2½ Mix		1:3 Mix		1:3½ Mix	
		Ce-ment sacks	Sand cu. ft.	Ce-ment sacks	Sand cu. ft.	Ce-ment sacks	Sand cu. ft.	Ce-ment sacks	Sand cu. ft.
¼"	2.08	.93	1.86	.79	1.96	.68	2.06	.60	2.10
⅜"	3.13	1.40	2.80	1.19	2.95	1.03	3.10	.90	3.16
½"	4.17	1.86	3.72	1.58	3.94	1.37	4.12	1.20	4.22
⅝"	5.21	2.32	4.65	1.98	4.92	1.71	5.15	1.50	5.27
¾"	6.25	2.79	5.58	2.37	5.90	2.06	6.18	1.80	6.32
1"	8.33	3.72	7.44	3.16	7.86	2.74	8.24	2.40	8.42

Recommended Proportions for Concrete for Various Types of Concrete Work

These mixes are suggested as suitable under normal or average conditions. If pebbles or crushed rock are not available the following cement and sand mixes may be substituted:

1:2.5 mix for 1:2:3 mix; 1:3 mix for 1:2:4 mix; 1:3.5 mix for 1:2.5:4 mix.

Work	Mixture	Maximum size aggregate	Slump	Water Cu. Ft. per sack	Ratio Gals. per sack
Areaways	1:2½:4	1½ in.	2½ in.	.80	6.0
Barn Approaches.....	1:2½:4	1½ in.	2½ in.	.80	6.0
Bins	1:2:3	1½ in.	4 to 6 in.	.65	4.5
Boiler Settings.....	1:2:4	2 in.	4 to 6 in.	.70	5.25
Catch Basins.....	1:2:3	1½ in.	2 to 3 in.	.60	4.50
Cellars	1:2:4	1½ in.	4 to 6 in.	.75	5.50
Cisterns	1:2:3	1 in.	4 to 6 in.	.65	4.50
Cold Frames.....	1:2½:4	1 in.	4 to 6 in.	.90	6.75
Courts, Tennis.....	1:2½:4	1½ in.	2 to 4 in.	.85	6.25
Curbs	1:2½:4	1½ in.	2 to 4 in.	.85	6.25
Dipping Vats.....	1:2:3½	1½ in.	4 to 6 in.	.70	5.25
Driveways	1:2:4	1½ in.	2 to 4 in.	.70	5.25
Engine Beds.....	1:2:4	2 in.	4 to 6 in.	.75	5.50
Fence Posts.....	1:2:3	½ in.	2 to 4 in.	.60	4.50
Floors, Reinforced.....	1:2:3	1 in.	4 to 6 in.	.65	4.50
Floors, Plain.....	1:2½:4	1½ in.	2 to 4 in.	.85	6.25
Foundations (Mass).....	1:2½:5	3 in.	4 to 6 in.	.90	6.75
Gutters	1:2½:4	1½ in.	2 to 4 in.	.85	6.25
Hog Wallows.....	1:2:3½	2 in.	2 to 4 in.	.65	4.50
Hot Beds.....	1:2½:4	1 in.	4 to 6 in.	.90	6.75
Manure Pits.....	1:2:3	1½ in.	4 to 6 in.	.65	4.50
Piers, House.....	1:2:3½	2 in.	4 to 6 in.	.70	5.25
Retaining Walls.....	1:2:3½	1½ in.	4 to 6 in.	.70	5.25
Roads	1:2:3½	2 in.	1 to 3 in.	.65	4.50
Roofs	1:2:3	1½ in.	4 to 6 in.	.65	4.50
Runways	1:2½:4	1½ in.	2 to 4 in.	.80	6.00
Sidewalks	1:2½:4	1½ in.	2 to 4 in.	.80	6.00
Steps and Stairways.....	1:2½:4	1 in.	2 to 4 in.	.80	6.00
Slabs	1:2:3	1½ in.	4 to 6 in.	.65	4.50
Septic Tanks.....	1:2:4	1 in.	4 to 6 in.	.75	5.50
Storage Cellar Walls.....	1:2½:4	1½ in.	4 to 6 in.	.85	6.25
Stucco	1:4	¼ in.	1 to 3 in.	.60	4.50
Tree Surgery.....	1:3	¼ in.	1 to 4 in.	.65	4.75
Troughs, Water.....	1:2:3	1 in.	4 to 6 in.	.65	4.75
Walls	1:2:4	1½ in.	4 to 6 in.	.75	5.50
Walls subject to moisture	1:2:3	1½ in.	4 to 6 in.	.65	4.75

Number of Square Feet of Concrete Floor of Any Thickness From 1 Cubic Yard of Concrete

Thickness Inches	No. Sq. Ft.	Thickness Inches	No. Sq. Ft.
1	324	7	46
1¼.....	259	7¼.....	44
1½.....	216	7½.....	43
1¾.....	185	7¾.....	42
2	162	8	40
2¼.....	144	8¼.....	39
2½.....	130	8½.....	38
2¾.....	118	8¾.....	37
3	108	9	36
3¼.....	100	9¼.....	35
3½.....	93	9½.....	34
3¾.....	86	9¾.....	33
4	81	10	32
4¼.....	76	10¼.....	31
4½.....	72	10½.....	31
4¾.....	68	10¾.....	30
5	65	11	29½
5¼.....	62	11¼.....	29
5½.....	59	11½.....	28
5¾.....	56	11¾.....	27½
6	54	12	27
6¼.....	52	12¼.....	26½
6½.....	50	12½.....	26
6¾.....	48	12¾.....	25½

Tables based on Common Brick, 8"x3 $\frac{3}{4}$ "x2 $\frac{1}{2}$ ". All walls solid with all joints filled. No allowance for waste.

Number of Bricks for 1000 Square Feet of Wall

Width of Joint, In.	Thickness of Wall, Inches			
	4	8	12	16
$\frac{1}{4}$	6,980	14,000	20,900	27,000
$\frac{3}{8}$	6,550	13,100	19,600	26,200
$\frac{1}{2}$	6,160	12,300	18,500	24,600
$\frac{5}{8}$	5,810	11,600	17,400	23,200
$\frac{3}{4}$	5,490	11,000	16,500	21,900

Sacks of Masonry Cement Required to lay 1000 Bricks

Mix	Thickness of Wall, Inches	Width of Joint, Inches				
		$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
1:2	4	2.7	4.1	5.5	7.0	8.4
	8, 12, 16	4.1	5.6	7.2	8.7	10.2
1:2 $\frac{1}{2}$	4	2.3	3.5	4.7	6.0	7.2
	8, 12, 16	3.5	4.8	6.1	7.4	8.7
1:3	4	2.0	3.0	4.1	5.2	6.3
	8, 12, 16	3.0	4.2	5.3	6.5	7.6
1:3 $\frac{1}{2}$	4	1.8	2.7	3.6	4.6	5.5
	8, 12, 16	2.7	3.7	4.7	5.7	6.7

Square Feet of Wall per 1000 Bricks

Width of Joint, In.	Thickness of Wall, Inches			
	4	8	12	16
$\frac{1}{4}$	143	71.6	47.7	35.8
$\frac{3}{8}$	153	76.4	50.9	38.2
$\frac{1}{2}$	162	81.2	54.1	40.6
$\frac{5}{8}$	172	86.1	57.4	43.1
$\frac{3}{4}$	182	91.2	60.8	45.6

Quantity of Mortar per 1000 Bricks

Width of Joint, In.	Thickness of Wall, Inches			
	4		8, 12, 16 and Larger	
	Cu. Ft.	Cu. Yd.	Cu. Ft.	Cu. Yd.
$\frac{1}{4}$	5.7	0.21	8.7	0.32
$\frac{3}{8}$	8.7	0.32	11.8	0.44
$\frac{1}{2}$	11.7	0.43	15.0	0.56
$\frac{5}{8}$	14.8	0.55	18.3	0.68
$\frac{3}{4}$	17.9	0.66	21.7	0.80

Quantities of Materials for Mortar

Sand is assumed to weigh 80 lbs. per cubic foot measured damp and loose and containing 5% moisture.

Mix by Damp Loose Volume	Per Cu. Foot		Per Cu. Yard	
	Cement lb.	Sand lb.	Cement Sacks*	Sand Yd.
1:2	33.2	76	12.8	.95
1:2 $\frac{1}{2}$	28.3	81	10.9	1.01
1:3	24.6	84	9.5	1.05
1:3 $\frac{1}{2}$	21.8	87	8.4	1.09

* 1 sack weighs 70 lbs.

QUANTITIES FOR 100 Sq. Ft. OF WALL

Joint Thickness	4" Wall				
	1/4"	3/8"	1/2"	5/8"	3/4"
No. of Brick	698	655	616	581	549
Cu. Ft. of Mortar	4.0	5.7	7.2	8.6	9.8
Mix 1-2					
Cement, Sacks	1.90	2.70	3.41	4.09	4.64
Sand, Cu. Ft.	3.79	5.40	6.83	8.15	9.29
Sand, Cu. Yds.	.14	.20	.25	.30	.34
Mix 1-2 1/2					
Cement, Sacks	1.61	2.30	2.91	3.47	3.96
Sand, Cu. Ft.	4.03	5.75	7.26	8.68	9.89
Sand, Cu. Yds.	.15	.21	.27	.32	.37
Mix 1-3					
Cement, Sacks	1.41	2.00	2.53	3.03	3.44
Sand, Cu. Ft.	4.21	6.00	7.58	9.05	10.31
Sand, Cu. Yds.	.16	.22	.28	.34	.38
Mix 1-3 1/2					
Cement, Sacks	1.24	1.77	2.24	2.67	3.04
Sand, Cu. Ft.	4.35	6.20	7.83	9.35	10.65
Sand, Cu. Yds.	.16	.23	.29	.35	.39

Joint Thickness	8" Wall				
	1/4"	3/8"	1/2"	5/8"	3/4"
No. of Brick	1396	1310	1232	1161	1097
Cu. Ft. of Mortar	12.2	15.5	18.6	21.3	23.8
Mix 1-2					
Cement, Sacks	5.79	7.36	8.83	10.10	11.29
Sand, Cu. Ft.	11.56	14.69	17.63	20.19	22.55
Sand, Cu. Yds.	.43	.54	.65	.75	.84
Mix 1-2 1/2					
Cement, Sacks	4.93	6.26	7.51	8.60	9.61
Sand, Cu. Ft.	12.30	15.63	18.75	21.48	24.00
Sand, Cu. Yds.	.46	.58	.69	.80	.89
Mix 1-3					
Cement, Sacks	4.29	5.46	6.54	7.50	8.37
Sand, Cu. Ft.	12.84	16.31	19.58	22.41	25.04
Sand, Cu. Yds.	.48	.60	.73	.83	.93
Mix 1-3 1/2					
Cement, Sacks	3.79	4.81	5.79	6.61	7.40
Sand, Cu. Ft.	13.26	16.85	20.18	23.16	25.88
Sand, Cu. Yds.	.49	.62	.75	.86	.96

Joint Thickness	12" Wall				
	1/4"	3/8"	1/2"	5/8"	3/4"
No. of Brick	2095	1965	1848	1742	1646
Cu. Ft. of Mortar	18.2	23.3	27.8	31.9	35.7
Mix 1-2					
Cement, Sacks	8.63	11.06	13.19	15.13	16.93
Sand, Cu. Ft.	17.25	22.08	26.35	30.23	33.83
Sand, Cu. Yds.	.64	.82	.98	1.12	1.25
Mix 1-2 1/2					
Cement, Sacks	7.36	9.41	11.23	12.89	14.41
Sand, Cu. Ft.	18.25	23.50	28.04	32.16	36.00
Sand, Cu. Yds.	.68	.87	1.04	1.19	1.33
Mix 1-3					
Cement, Sacks	6.40	8.20	9.79	11.23	12.56
Sand, Cu. Ft.	19.15	24.51	29.25	33.56	37.56
Sand, Cu. Yds.	.71	.91	1.08	1.24	1.39
Mix 1-3 1/2					
Cement Sacks	5.66	7.24	8.64	9.91	11.10
Sand, Cu. Ft.	19.79	25.34	30.23	34.69	38.05
Sand, Cu. Yds.	.73	.94	1.12	1.28	1.41

Joint Thickness	16" Wall				
	1/4"	3/8"	1/2"	5/8"	3/4"
No. of Brick	2793	2464	2194	2020	2322
Cu. Ft. of Mortar	24.2	31.0	37.1	42.6	47.6
Mix 1-2					
Cement, Sacks	11.47	14.70	17.60	20.20	22.57
Sand, Cu. Ft.	22.94	29.38	35.16	40.38	45.11
Sand, Cu. Yds.	.85	1.09	1.30	1.50	1.67
Mix 1-2 1/2					
Cement, Sacks	8.91	12.51	14.99	17.20	19.23
Sand, Cu. Ft.	24.40	31.26	37.21	42.96	48.00
Sand, Cu. Yds.	.90	1.16	1.38	1.59	1.78
Mix 1-3					
Cement, Sacks	8.51	10.91	13.06	14.99	16.74
Sand, Cu. Ft.	25.46	32.63	39.04	44.83	50.00
Sand, Cu. Yd.	.94	1.21	1.45	1.66	1.86
Mix 1-3 1/2					
Cement, Sacks	7.53	9.64	11.53	13.24	14.80
Sand, Cu. Ft.	26.31	33.70	40.34	46.31	51.75
Sand, Cu. Yds.	.97	1.25	1.49	1.72	1.92

Area Covered by One Cubic Yard of Sand

In Various Mixes

	Mixture Parts by Volume Cement Sand	Thickness of Mortar Coat				
		1/4 Inch Sq. Ft.	3/8 Inch Sq. Ft.	1/2 Inch Sq. Ft.	3/4 Inch Sq. Ft.	1 Inch Sq. Ft.
1	1 1/2	1508	1006	754	503	377
1	2	1364	910	682	455	341
1	2 1/2	1282	855	641	427	321
1	3	1222	815	611	407	306

It is not necessary to allow for waste where the stucco is applied to a paper-backed wire fabric, similar to the National Steel Fabric or E-Code Fabric.

Face Brick Required for One Square Foot of Wall

Here is a handy table for quick estimating of the number of 8 x 2 1/4 x 3 3/4 inch face brick required for one square foot of wall.

Width of mortar joints in inches

	1/8 in.	1/4 in.	3/8 in.	1/2 in.
No. brick.....	7 1/2	7	6 1/2	6 1/6
	5/8 in.	3/4 in.	7/8 in.	1 in.
No. brick.....	5 7/8	5 1/2	5 1/4	5

The number of face brick required for one square foot of wall as given in the above table does not include an allowance for "header" courses extending into the common brick backing to form a bond, but is based on using all stretchers or "blind headers" with metal wall ties.

If the face brick are laid with a full row of "headers" every 5th, 6th or 7th course add the following percentages to the quantities given above:

Percentages to Be Added for Various Brick Bonds

Common (full header course every 5th course).....	20%
Common (full header course every 6th course).....	16 2/3%
Common (full header course every 7th course).....	14 2/3%
English or English Cross* (full headers every other course).....	50%
English or English Cross* (full headers every 6th course).....	16 2/3%
Dutch or Dutch Cross* (full headers every other course).....	50%
Dutch or Dutch Cross* (full headers every 6th course).....	16 2/3%
Flemish (full headers every course).....	33 1/3%
Flemish (full headers every 6th course).....	5 2/3%
Double Header (2 headers and a stretcher every 6th course) ..	8 1/3%
Double Header (2 headers and a stretcher every 5th course) ..	10%

* Add 10 to 15% extra brick for waste in cutting.

Cement Required to Lay 1,000 Concrete Masonry Units

With 1/2" Joints—1-3 Mix

Size of Unit	Thickness of Walls	Cu. Ft. Mortar	Sacks Cement	Cu. Yds. Sand
8x 8x16	8"	52.25	16.5	1.82
4x 8x16	4"	32.3	10.2	1.12
8x12x16	12"	66.5	21.0	2.31
8x 5x12	8"	26.0	8.2	.90

Mortar for 1,000 Glass Block

$\frac{1}{4}$ " Joints

Size of Units	Number of Units	Mortar Cu. Ft.
$4\frac{7}{8} \times 8 \times 3\frac{7}{8}$	1,000	8
$5\frac{3}{4} \times 5\frac{3}{4} \times 3\frac{7}{8}$	1,000	$7\frac{1}{8}$
$7\frac{3}{4} \times 7\frac{3}{4} \times 3\frac{7}{8}$	1,000	$9\frac{1}{2}$
$11\frac{3}{4} \times 11\frac{3}{4} \times 3\frac{7}{8}$	1,000	$14\frac{5}{8}$

Mortar for Glass Block per 100 Sq. Ft. of Wall

$\frac{1}{4}$ " Joints

Size of Units	Number of Units	Mortar Cu. Ft.
$4\frac{7}{8} \times 8 \times 3\frac{7}{8}$	341	$2\frac{3}{4}$
$5\frac{3}{4} \times 5\frac{3}{4} \times 3\frac{7}{8}$	400	$2\frac{7}{8}$
$7\frac{3}{4} \times 7\frac{3}{4} \times 3\frac{7}{8}$	225	$2\frac{1}{2}$
$11\frac{3}{4} \times 11\frac{3}{4} \times 3\frac{7}{8}$	100	$1\frac{1}{2}$

Cubic Feet of Mortar to Lay 100 Sq. Ft. of Tile

Based on covering one bed and one end joint— $\frac{1}{2}$ " joints. No allowance for waste.

Size of Tile	Cells Laid	Mortar Cu. Ft.
2 x 12 x 12	Horizontal	1.30
3 x 12 x 12	Horizontal	1.60
4 x 12 x 12	Horizontal	2.00
6 x 12 x 12	Horizontal	2.60
8 x 12 x 12	Horizontal	3.25
10 x 12 x 12	Horizontal	4.00
12 x 12 x 12	Horizontal	5.00
6 x 12 x 12	2" Moisture Stop	3.30
8 x 12 x 12	2" Moisture Stop	4.60
10 x 12 x 12	4" Moisture Stop	5.25
12 x 12 x 12	6" Moisture Stop	6.00
10 x 8 x 16	Building Block	5.75
6 x 12 x 8		3.50
8 x 12 x 8		5.80

Barrel of Cement Weighs 376 Pounds

A barrel of cement weighs 376 pounds net and equals four bags of 94 pounds each, each bag containing approximately one cubic foot.

Quantities of Materials Required for Concrete Silos

Although the quantities of cement, sand, stone or pebbles in the table below are approximate figures, they have been found to be accurate enough for the average concrete silo with 6 inch wall (no roof). Mix for walls is 1:2:4 and 1:2½:5 for floor and footings.

Size Diameter x Height	Cement Bbls.	Sand Cu. Yds.	Stone or Pebbles Cu. Yds.
10 x 25 ft.	25.0	7.5	15.0
12 x 30 ft.	36.0	11.0	22.0
12 x 35 ft.	41.0	12.5	25.0
14 x 30 ft.	42.5	13.0	26.0
14 x 35 ft.	48.0	14.7	29.4
14 x 40 ft.	54.5	16.5	33.0
16 x 40 ft.	62.5	19.0	38.0
16 x 45 ft.	69.0	21.0	42.0
18 x 45 ft.	80.0	24.5	49.0
18 x 50 ft.	86.5	26.5	53.0

Ratio of Film Thickness and Coverage of Materials Either of Plastic or Liquid Consistency Based Upon 231 cu. in. to One Gallon

Applied ½ inch thick—3.2 sq. ft. per gallon

¼	6.4
1/16	25.6
1/32	51.2
1/64	102.8
1/128	204.8
1/256	408.6
1/300	480.

Thickness of film: .003 mils (3/1000th inch.)

1.6 is the factor (reducing cubic content of gal.)

Divide 1.6 by thickness in inches to get coverage per gal.

Capacities of Silos

	Inside Diameter, Feet				
	10	12	14	16	18
Height Feet	Tons	Tons	Tons	Tons	Tons
20	26	38	51	67	85
21	28	40	55	72	91
22	30	43	59	77	97
23	32	46	63	82	103
24	34	49	66	87	110
25	36	52	70	90	116
26	38	55	74	97	123
27	40	58	79	103	130
28	42	61	83	108	137
29	44	64	87	114	144
30	47	67	91	119	151
31	49	70	96	125	158
32	51	74	100	131	166
33	53	77	105	138	173
34	56	80	109	143	181
35	58	84	114	149	188
36	61	87	118	155	196
37	63	90	123	161	204
38	65	94	128	167	212
39	68	97	133	174	221
40	71	101	138	180	229

Plywood Uses, Grades and Thicknesses

Use	Grade	Suggested Thickness
Interior Wall and Ceiling Coverings (Camps, barracks, residences, etc.)	Plywall (wallboard) or Plypanel (Good-I-Side)	1/4" or 1/2" 1/4" or 3/8"
Wall Sheathing (To be covered)	Plyscord (Sheathing)	5/16" or 3/8"
Roof Sheathing (To be covered)	Plyscord (Sheathing)	5/16"
Roof Sheathing (To be covered)	Plyscord (Sheathing)	3/8"
Roof Sheathing (To be covered)	Plyscord (Sheathing)	5/8"
Sub-floors	Plyscord (Sheathing)	1/2" 5/8"
Exterior Panels or Siding (Permanently exposed to weather)	Exterior type (in Sound-I-Side or Good-I-Side grade)	3/8" or more 1/2" & 5/8"
Concrete Forms (Multiple re-use)	Plyform (concrete form panel grade)	5/8" or 3/4"
Concrete Forms (Single use)	Plyscord (Sheathing) or Plywall (as form liner)	5/8" 1/4" & 3/8"

MENSURATION

- Area of a square = length x breadth or height.
- Area of a rectangle = length x breadth or height.
- Area of a triangle = base x $\frac{1}{2}$ altitude.
- Area of parallelogram = base x altitude.
- Area of trapezoid = altitude x $\frac{1}{2}$ the sum of parallel sides.
- Area of trapezium = divide into two triangles, total their areas.
- Circumference of circle = diameter x 3.1416.
- Circumference of circle = radius x 6.283185.
- Diameter of circle = circumference x .3183.
- Diameter of circle = square root of area x 1.12838.
- Radius of a circle = circumference x .0159155.
- Area of a circle = half diameter x half circumference.
- Area of a circle = square of diameter x .7854.
- Area of a circle = square of circumference x .07958.
- Area of a sector of circle = length of arc x $\frac{1}{2}$ radius.
- Area of a segment of circle = area of sector of equal radius—
area of triangle, when the segment is less, and plus area of
triangle, when segment is greater than the semi-circle.
- Area of circular ring = sum of the diameter of the two circles x
difference of the diameter of the two circles and that product
x .7854.
- Side of square that shall equal area of circle = diameter x .8862.
- Side of square that shall equal area of circle = circumference x
.2821.
- Diameter of circle that shall contain area of a given square =
side of square x 1.1284.
- Side of inscribed equilateral triangle = diameter x .86.
- Side of inscribed square = diameter x .7071.
- Side of inscribed square = circumference x .225.
- Area of ellipse = product of the two diameters x .7854.
- Area of a parabola = base x $\frac{2}{3}$ of altitude.
- Area of a regular polygon = sum of its sides x perpendicular from
its center to one of its sides divided by 2.
- Surface of cylinder or prism = area of both ends plus length and
x circumference.
- Surface of sphere = diameter x circumference.
- Solidity of sphere = surface x $\frac{1}{6}$ diameter.
- Solidity of sphere = cube of diameter x .5236.
- Solidity of sphere = cube of radius x 4.1888.
- Solidity of sphere = cube of circumference x .016887.
- Diameter of sphere = cube root of solidity x 1.2407.
- Diameter of sphere = square root of surface x .56419.
- Circumference of sphere = square root of surface x 1.772454.
- Circumference of sphere = cube root of solidity x 3.8978.
- Contents of segment of sphere = (height squared plus three times
the square of radius of base) x (height x .5236).
- Contents of a sphere = diameter x .5236.
- Side of inscribed cube of sphere = radius x 1.1547.
- Side of inscribed cube of sphere = square root of diameter.
- Surface of pyramid or cone = circumference of base x $\frac{1}{2}$ of the
slant height plus area of base.
- Contents of pyramid or cone = area of base x $\frac{1}{3}$ altitude.
- Contents of frustum of pyramid or cone = sum of circumference at
both ends x $\frac{1}{2}$ slant height plus area of both ends.
- Contents of frustum of pyramid or cone = multiply areas of two
ends together and extract square root. Add to this root the
two areas and x $\frac{1}{3}$ altitude.
- Contents of a wedge = area of base x $\frac{1}{2}$ altitude.

WEIGHTS AND MEASURES

TROY WEIGHT

24 grains.....	1 pwt.
20 pwts.....	1 ounce
12 ounces.....	1 pound
Used for weighing gold, silver and jewels.	

APOTHECARIES WEIGHT

20 grains.....	1 scruple
3 scruples.....	1 dram
8 drams.....	1 ounce
12 ounces.....	1 pound

The ounce and pound in this are the same as in Troy Weight

AVOIRDUPOIS WEIGHT

27 $\frac{1}{2}$ grains.....	1 dram
16 drams.....	1 ounce
16 ounces.....	1 pound
25 pounds.....	1 quarter
4 quarters.....	1 cwt.
2,000 lbs.....	1 short ton
2,240 lbs.....	1 long ton

DRY MEASURE

2 pints.....	1 quart
8 quarts.....	1 peck
4 pecks.....	1 bushel
36 bushels.....	1 chaldron

LIQUID MEASURE

4 gills.....	1 pint
2 pints.....	1 quart
4 quarts.....	1 gallon
3 $\frac{1}{2}$ gallons.....	1 barrel
2 barrels.....	1 hogshead

LONG MEASURE

12 inches.....	1 foot
3 feet.....	1 yard
5 $\frac{1}{2}$ yards.....	1 rod
40 rods.....	1 furlong
8 furlongs.....	1 sta. mile
3 miles.....	1 league

CLOTH MEASURE

2 $\frac{1}{4}$ inches.....	1 nail
4 nails.....	1 quarter
4 quarters.....	1 yard

SQUARE MEASURE

144 sq. inches.....	1 sq. ft.
9 sq. ft.....	1 sq. yard
30 $\frac{1}{4}$ sq. yds.....	1 sq. rod
40 sq. rods.....	1 rood
4 roods.....	1 acre
640 acres.....	1 sq. mile

SURVEYOR'S MEASURE

7.92 inches.....	1 link
25 links.....	1 rod
4 rods.....	1 chain
10 sq. chains or 160 sq. rods.....	1 acre
640 acres.....	1 square mile
36 sq. miles or 6 miles sq.....	1 township

CUBIC MEASURE

1,728 cubic inches.....	1 cubic foot
128 cubic feet.....	1 cord wood
27 cubic feet.....	1 cubic yard
40 cubic feet.....	1 ton shpg.
2,150.42 cu. inches.....	1 standard bushel
268.8 cu. in.....	1 standard gallon dry
231 cu. in.....	1 standard gallon liquid
1 cubic foot.....	about $\frac{4}{5}$ of a bushel
1 Perch.....	A mass 16 $\frac{1}{2}$ ft. long, 1 ft. high and 1 $\frac{1}{2}$ ft. wide, containing 24 $\frac{3}{4}$ cu. ft.

METRIC EQUIVALENTS— LINEAR MEASURE

1 centimeter.....	0.3937 in.
1 decimeter.....	3.937 in. or 0.328 ft.
1 meter.....	39.37 in. or 1.0936 yards
1 dekameter.....	1.9884 rods
1 kilometer.....	0.62137 mile
1 inch.....	2.54 centimeters
1 foot.....	3.048 decimeters
1 yard.....	0.9144 meter
1 rod.....	0.5028 dekameter
1 mile.....	1.6093 kilometers

SQUARE MEASURE

1 sq. centimeter.....	0.1550 square inches
1 sq. decimeter.....	0.1076 square feet
1 sq. meter.....	1.196 sq. yd.
1 acre.....	3.954 sq. rods
1 hectare.....	2.47 acres
1 sq. kilometer.....	0.386 sq. mile
1 square inch.....	6.452 sq. centimeters
1 square foot.....	9.2903 sq. decimeters
1 square yard.....	0.8361 square meter
1 square rod.....	0.259 acre
1 acre.....	0.4047 hectare
1 square meter.....	2.59 sq. kilometers

WEIGHTS

1 gram.....	0.03527 ounce
1 kilogram.....	2.204622 lbs.
1 metric ton.....	0.9842 English ton
1 ounce.....	28.35 grams
1 pound.....	0.4536 kilogram
1 English ton.....	1.0160 metric tons

APPROXIMATE METRIC EQUIVALENTS

1 decimeter.....	4 inches
1 meter.....	1.1 yards
1 kilometer.....	$\frac{5}{8}$ of mile
1 hectare.....	$\frac{2}{5}$ acres
1 stere, or cu. meter.....	$\frac{1}{4}$ of a cord
1 liter.....	1.06 qt. liquid or 0.9 qt. dry
1 hektoliter.....	2.8 bushels
1 kilogram.....	2.2 pounds
1 metric ton.....	2,200 pounds

Container Measures of Materials

Keene's Cement

- A bag of Keene's cement weighs 100 lbs.
- A bag of Keene's cement contains 1.3 cu. ft.
- A cu. ft. of Keene's cement weighs 75 lbs.
- A 12-qt. bucket holds 30 lbs. of Keene's cement.
- A 12-qt. bucket holds .4 cu. ft. of Keene's cement.

Lime Putty

- A cu. ft. of lime putty weighs approximately 80 lbs.
- A cu. ft. of lime putty is made from 45.8 lbs. of hydrated lime.
- A cu. ft. of lime putty is made from 27.3 lbs. of quicklime.
- A 12-qt. bucket holds approximately 30 lbs. of lime putty.
- A cu. ft. of lime putty is approximately 2.7 12-qt. buckets.
- A cu. ft. of lime putty is approximately 6.5 No. 2 shovels (new).

Hydrated Lime

- Hydrated lime weighs 40 lbs. per cu. ft.
- A 50 lb. bag of hydrated lime makes 1.09 cu. ft. lime putty.
- 100 lbs. of hydrated lime makes 2.18 cu. ft. lime putty.
- 45.8 lbs. of hydrated lime makes 1 cu. ft. lime putty.
- 170 lbs. of hydrated lime makes the same quantity of putty as 100 lbs. of quicklime.
- A cu. ft. of lime putty made from hydrate weighs about 83 lbs.

Quicklime

- Quicklime weighs 55-60 lbs. per cu. ft.
- 27.3 lbs. of quicklime will make 1 cu. ft. of lime putty.
- 100 lbs. of quicklime will make 3.69 cu. ft. of lime putty.
- 100 lbs. of quicklime will make as much putty as 170 lbs. of hydrate.
- A cu. ft. of putty made from quicklime weighs slightly over 80 lbs.

Sand

- A cu. yd. of sand weighs 2,700 lbs.
- A ton of sand is approximately $\frac{3}{4}$ of a cu. yd.
- A cu. ft. of sand weighs approximately 100 lbs.
- A 12-qt. bucket holds approximately 40 lbs. of sand.
- A ton of sand contains approximately 20 cu. ft. of sand.

Hair

- A bushel of hair weighs 6 to 8 lbs.

Weight of Building Materials per Cubic Foot

MATERIAL	WEIGHT Lbs. Cu. Ft.	MATERIAL	WEIGHT Lbs. Cu. Ft.
Asphalt-pavement composition	100	Limestone	155 to 172
Birch	48	Maple	48
Bluestone	160	Marble	171 to 179
Brick, best pressed	150	Masonry, squared granite or limestone	165
Brick, common and hard.....	125	Masonry, granite or limestone, dry rubble	138
Brickwork in lime mortar, average	120	Masonry, granite or limestone, rubble	150
Brickwork in cement mortar, average	130	Masonry, sandstone	150
Brickwork, pressed brick, thin joints	140	Mineral wool	12
Cypress	36	Mortar, hardened	90 to 100
Fir, Douglas	36	Oak	48
Firebrick	150	Plaster	96
Granite	167	Slate	172 to 177
Gypsum partition block (hollow)	48	Spruce	30
Hemlock	30	Steel, structural	489.6
Hollow tile partition block.....	60	Terra cotta, solid	120
Iron, cast	450	Terra cotta, masonry work	70 to 80
Iron, wrought	480	Tile, solid	110 to 120
		Yellow pine	48

A HANDY TABLE FOR MATERIAL WEIGHTS

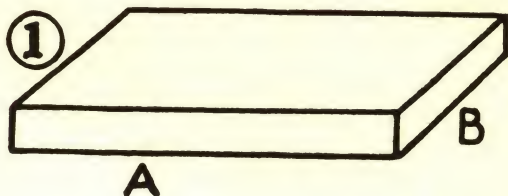
Economies in truck handling and routing can be effected with this handy reference table of building material weights and measures.

BUILDING MATERIAL

ASBESTOS—153-192 lbs. per cu. ft.
BRICK (Common)—2¼"x4"x8¼", 5.4 lbs. each; 2.7 tons—M.
BRICK (Fire) (Standard)—9"x4½"x2½", 7.0 lbs. each; 3.5 tons—M.
BRICK (Hard)—2¼"x4¼"x8½", 6.48 lbs. each; 3.24 tons—M.
BRICK (Paving)—2¼"x4"x8½", 6.75 lbs. each; 3.37 tons—M.
BRICK (Paving Block)—3¼"x4"x8½", 8.75 lbs. each; 4.37 tons—M.
BRICK (Soft)—2¼"x4"x8¼", 4.32 lbs. each; 2.6 tons—M.
CEMENT—Bag—94 lbs. each; bbl. weighs 376 lbs.
CLAY (Dry)—63-95 lbs.—cu. ft.; 1700-2295 lbs.—cu. yard.
CLAY (Fire) 130 lbs.—cu. ft.; 3510 lbs.—cu. yard.
CLAY (Wet)—120-140 lbs.—cu. ft.; 2970-3200 lbs.—cu. yard.
CONCRETE—138 lbs.—cu. ft.; 3726 lbs. cu. yard.
CONCRETE: Cinder concrete—112 lbs. per cu. ft.
Gravel and Limestone Concrete—150 lbs. per cu. ft.
Trap-rock concrete—155 lbs. per cu. ft.
CRUSHED STONE—100 lbs. cu. ft. 2700 lbs—cu. yard.
GRAVEL—95 lbs.—cu. ft.; 2565 lbs.—cu. yard.
HYDRATED LIME—Abt. 40 lbs. per cu. ft.
LIME—75 lbs.—bu.; 320 lbs.—bbl. large; 220 lbs. small.
MORTAR—103 lbs. per cu. ft.
PLASTER OF PARIS—98 lbs. pr. cu. ft.
REINFORCED CONCRETE—150 lbs. per cu. ft.
SAND (Dry)—97-117 lbs.—cu. ft.; 2619-3159 lbs.—cu. yard.
SAND (Wet)—120-140 lbs.—cu. ft.; 3240-3780 lbs.—cu. yard.
SHINGLES—Bundles 24" long, 20" wide, 10" high—weighs 50 lbs. Approx. 250 per bl.
SLAG—1755-1890 lbs. per cu. yd.; 65-70 lbs. per cu. ft.
SLAG CONCRETE—135 lbs. per cu. ft.
STONE RIPRAP—65 lbs.—cu. ft.; 1775 lbs.—cu. yard.

HOW TO MEASURE FLAT SURFACES

How to measure a Flat roof. See Figure 1. Multiply length (A) by width (B).

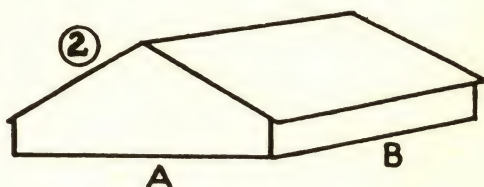


EXAMPLE:

Length 100 feet, width 50 feet.

$100 \times 50 = 5000$ square feet or 50 squares of roof surface.

How to measure a Gable roof. See Figure 2. Multiply length (B) by width (A), and add $\frac{1}{4}$ of the total.

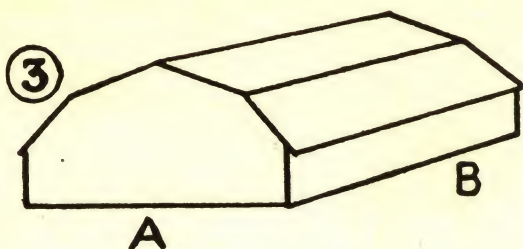


EXAMPLE:

Length 100 feet, width 50 feet.

$100 \times 50 = 5000$; $\frac{1}{4}$ of 5000 = 1250; $5000 + 1250 = 6250$ square feet or about 63 squares of roof surface.

How to measure a Gambrel roof. See Figure 3. Multiply length (B), by width (A), and add $1/3$ of the total.



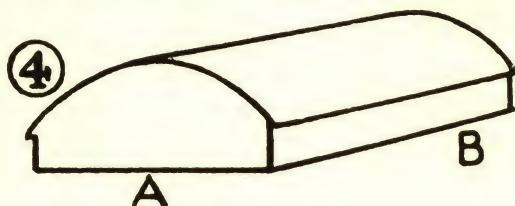
EXAMPLE:

Length 100 feet, width 50 feet.

$$100 \times 50 = 5000.$$

$1/3$ of 5000 = 1667; $5000 + 1667 = 6667$ square feet or about 67 squares of roof surface.

How to measure an Arch roof. See Figure 4. Multiply length (B), by width (A), and add $1/2$ of the total.



EXAMPLE:

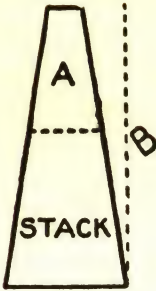
Length 100 feet, width 50 feet.

$$100 \times 50 = 5000.$$

$1/2$ of 5000 = 2500; $5000 + 2500 = 7500$ square feet or 75 squares of roof surface.

HOW TO MEASURE A STACK

To compute area of a stack multiply height (B) by the average diameter (A) and multiply that total by 3.



EXAMPLE:

Diameter of stack at top, 3 feet.

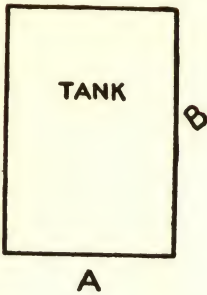
Diameter of stack at bottom, 6 feet.

Average diameter, $4\frac{1}{2}$ feet. Height, 40 feet.

$$40 \times 4\frac{1}{2} = 180.$$

$180 \times 3 = 540$ square feet or about $5\frac{1}{2}$ squares of surface.

HOW TO MEASURE A TANK



To compute the area of a tank multiply the height (B) by the diameter (A) and multiply that total by 3.

EXAMPLE:

Diameter, 20 feet.

Height, 50 feet.

$$20 \times 50 = 1000.$$

$1000 \times 3 = 3000$ square feet or about 30 squares of surface.

Often we are asked to calculate the amount of paint required to cover a tank of given dimensions. We give below a simple system of figuring the number of square feet in the surface of a tank, from which you can easily calculate the number of gallons of paint required, by dividing the square feet of surface by the covering capacity.

- (1) To find the area of the top of a tank: Multiply the square of the diameter by .7854.
- (2) To find the circumference of the tank: Multiply the diameter by 3.1416.
- (3) To find the area of the walls of the tank: Multiply the height by the circumference.

EXAMPLE: Suppose the tank is 15 feet across and 20 feet high. Then 15×15 equals 225, which when multiplied by .7854 shows 176.6 square feet in the top of the tank. The diameter of 15 feet multiplied by 3.1416 shows that the tank is 47.1 feet around. The circumference of 47.1 multiplied by the height of 20 feet equals 942 square feet—area of the wall.

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MEMORANDUM

Every Horn product has been time-tested and proven satisfactory for the purpose for which it is recommended. However, since the actual use of a product is beyond the control of the manufacturer, results are naturally dependent upon the quality and nature of other materials with which the product may be combined, upon proper workmanship, and upon local conditions.

The covering capacities indicated in this book are intended only as a guide. Actual covering capacities will, of course, vary for different surfaces.

HORN
CONSTRUCTION
DATA
and
HAND BOOK



A. C. HORN COMPANY

ESTABLISHED 1897

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